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ENTREPRENEURIAL COMPANIES: THEIR NEEDS AND CHALLENGES IN TODAY'S ECONOMY

FIELD HEARING

BEFORE THE

COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP

UNITED STATES SENATE

ONE HUNDRED SEVENTH CONGRESS

FIRST SESSION

SEPTEBER 10, 2001

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COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP

ONE HUNDRED SEVENTH CONGRESS

C O N T E N T S

OPENING STATEMENTS

ENTREPRENEURIAL COMPANIES: THEIR NEEDS AND CHALLENGES IN TODAY'S ECONOMY

MONDAY, SEPTEMBER 10, 2001

UNITED STATES SENATE,
COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP,
Washington, D.C.

The Committee met, pursuant to notice, at 9:30 a.m., at the MIT Faculty Club, Sixth Floor, 50 Memorial Drive, Cambridge, Massachusetts. The Honorable John F. Kerry, (Chairman of the Committee) presiding.

Present: Senator Kerry.

OPENING STATEMENT OF THE HONORABLE JOHN F. KERRY, CHAIRMAN, COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP AND A UNITED STATES SENATOR FROM MASSACHUSETTS

Chairman KERRY. The hearing will come to order. I want to thank everybody for joining us here this morning for this field hearing of the Small Business and Entrepreneurship Committee. This is actually the first field hearing that I have held as Chairman, and I am delighted, obviously, to have it here in Massachusetts, and to have it here at the Sloan School. I thank MIT for receiving us here today, Dean Schmalensee and Chuck Vest, and I am very appreciative for the use of these facilities.

For most of the Committee's history, it has been the Small Business Committee, and for better or worse, it has focused almost exclusively, except tangentially when the new markets venture concept came up a couple of years ago, but otherwise, almost exclusively on the Small Business Administration (SBA). Now, there is nothing wrong with focusing on the SBA and we will continue to do that because it is the critical component of our relationship with small businesses across the country. It is the lending program, 7(a). It is the SBIR, SBIC, technology transfer, the 8(a), all of those efforts and other continuing programs that we have made to assist small businesses. But, there is, in fact, a growing awareness reflected in the curriculum of business schools. I know that Harvard changed, I think, a year ago, what had been traditionally sort of a business structure course into an entrepreneurship course, and likewise, there is a national study on entrepreneurship which is very interesting that lays out some of the particularities with respect to entrepreneurs. It is the National Commission on Entrepre-

neurship that did a report in March of this year, “Understanding How Businesses Start and Grow.”

So, the title for today’s hearing reflecting the new focus of the Committee, itself, is “Entrepreneurial Companies: Their Needs and Challenges in Today’s Economy.” We have formally changed the name of this Committee to include the concept of entrepreneurship because we think it merits a special kind of focus. An entrepreneurial company is different because of the growth needs and because of the types of challenges it faces, as a growth company, compared to traditional small business that often might be mom and pop or have a different focus in terms of growth than a company that we have come to know as an entrepreneurial growth entity.

So, we really want to focus on that today. Though they represent less than 5 percent of all businesses, clearly, they represent the mass of substantial new jobs and of growth. Most companies that become the larger players in our economy, whether you are talking about, you know, Fed Ex or Cisco, they often begin with some component of Federal input, but they transition rapidly into a very different kind of player. Needless to say, it is in our interest to maximize our capacity to create and assist those kinds of companies.

Now, one of the legitimate questions today is “What is the appropriate Federal role here?” Some people might suggest, well, we have done very well for 50 years without a sort of formalized understanding of this role, and companies have made it, some have not. But, that is the nature of the entrepreneurial activity and that is the nature of the capital system. Indeed, that may well be true; but again, looming over us is this question of whether or not there are things that legitimately fall within the purview of government. Without picking winners, without creating losers, with any kind of command control or mandates or anything else, are there ways to assist in making the framework more friendly? Are there ways that we could deal, legitimately deal with some of the problems of new start-up entities? That is really what we want to look at today.

I do not approach this with a predetermined notion of outcome. This is a hearing in the truest sense of the word. We want to hear from folks, and that will help define for us what the potential mission might be of the Small Business and Entrepreneurship Committee or where we perhaps ought to be careful to keep armslength and not meddle.

So, with that quick introduction, let me welcome all of the witnesses here today. We are particularly grateful to them for coming. Ms. Jill Card, the president and founder of IBEX Process Technology from Lowell, and Mr. Rock Gnatovich, president of Spotfire, Inc., from Somerville, and then we will move to our second panel to sort of talk more broadly about some of what we hear in the first panel and some other issues, also.

Opening Statement of Chairman John F. Kerry, Senate Committee on Small Business and Entrepreneurship

Good morning everyone, and thank you for coming to what I believe will be a very enlightening hearing of the Committee on Small Business and Entrepreneurship.

The title for today's hearing is "Entrepreneurial Companies: Their Needs and Challenges in Today's Economy."

As some of you may know, the needs and circumstances of today's entrepreneurial companies differ from those of traditional small businesses. For instance, entrepreneurial companies are much more likely to depend on investment capital rather than loan capital. Additionally, although they represent less than five percent of all businesses, entrepreneurial companies create a substantial number of all new jobs and are responsible for developing a significant portion of technological innovations, both of which have substantial benefits for our economy.

Taken together, an unshakable determination to grow and improved productivity lie at the heart of what distinguishes fast growth or entrepreneurial companies from more traditional, albeit successful, small businesses.

This past June, my first act as the new Chairman of the Committee on Small Business was to add the word "Entrepreneurship" to the name of the Committee, making it the Senate Committee on Small Business and Entrepreneurship. I believe that adding "Entrepreneurship" to the Committee name more accurately reflects the Committee's valuable role in helping to foster and promote economic development by including entrepreneurial companies and the spirit of entrepreneurship in the United States.

Ten years ago the Internet did not even exist as we know it. Tremendous advances have been made in biotechnology, environmental technology, medical technology and other cutting edge

fields.

I'm pleased that Massachusetts companies have helped lead the way in many of these important new developments. But changing economic times threatens the growth of this important sector of our economy. Important questions must now be put forth such as where will the next generation of entrepreneurs come from, where will they get their funding and what role has and should the Federal Government play in encouraging entrepreneurship.

Although these are more abstract questions, they represent critical issues for policy and law makers, as we try and foster the unprecedented growth in new technologies – and are questions I am eager to hear our panelists touch on. But before we can decide on policies for the future, it is important to understand where we are and how we got here.

We are fortunate to have with us a diverse group of witnesses. Jill Card of Ibex Technology and Rock Gnotovich of Spotfire – two area entrpreneurial small businesses that have risen to success in their field – they comprise our first panel. Our second panel will consist of Mr. Patrick Von Bargen , Executive Director of the National Commission on Entrepreneurship, Washington, D.C., Mr. George Gendron, Editor in Chief of Inc. Magazine, Boston, Massachusetts, and Mr. John F. Hodgman, President of the Massachusetts Technology Development Corporation, Boston, Massachusetts.

Thank you all for being here today.

So, Ms. Card, would you lead off, and thank you very much for being with us this morning.

STATEMENT OF JILL P. CARD, PRESIDENT AND FOUNDER, IBEX PROCESS TECHNOLOGY, INC., LOWELL, MASSACHUSETTS

Ms. CARD. Right back at you. Thank you. I am Jill Card, founder and president of IBEX Process Technology and developer of the IBEX line of artificial intelligence controllers for semiconductor manufacturing process tools. IBEX was incorporated in March 2000, so I feel particularly equipped to talk this morning about the trials faced by new companies in the high tech market.

I have spent the last 20-plus years as an applied mathematician working within computer systems and semiconductor industries. Of those years, 17 were spent in the employ of very large engineering companies, and of those, over three-quarters of that time was spent within companies undergoing some form of transition, reorganization, downsizing, layoffs. I was fortunate in never having personally been downsized, but energetic people with good ideas get tired of living under conditions where job security has little or no correlation to their personal ability to perform. I was not alone in concluding that I would rather risk my future employment on my own ability to react and learn, than to have my fate in the hands of someone else's management decisions in a tough engineering market.

So, today, within the computer and semiconductor markets, there are a lot of technical people who, either through downsizing or personal choice, find themselves on their own with great ideas, nerve, energy, leadership, and organizational abilities and the excitement that it takes to bring those ideas to market. But, these people, like me, may have never imagined that they would be in business for themselves.

As a woman in high tech, I had wrestled and struggled for years with how to maintain a career and juggle a family simultaneously, but would not have considered being a ship's commander had the times not dictated this as a decidedly worthwhile option.

So, in 1998, I set out from Digital Equipment Corporation with a technology license for the product that I designed, and I started a business. What I found was that despite all my technology smarts and ability to think on my feet, the only two things I had to use for barter were my mouth and my stock. For the lowest possible cost and minimal stock, I needed to figure out how to get services for writing business plans, finding corporate and IP legal counsel, looking for investment banking and venture capital, getting marketing and sales support, web page design and collateral development, executive team search, et cetera. I had a very strong technical network, I had a great product, I had good access to my customer base, and I had no clue on how to run the business.

Time is critical in high tech, and if the development cycle for any new product is too long, you are out of business. So, when you ask me what could have helped me then, last year, or someone like me just beginning, particularly in a difficult economy, I would say that any program that would speed my ability to pinpoint quality professionals in all the above categories, with incentives provided to those professionals to encourage their participation in helping me

launch my company at reduced cost to me and reduced risk to them, to help me get off the ground faster, with the right support, and still have enough equity after the first year to make a strong and healthy company. This would be a tremendous help.

As it turned out, in the fall of 2000, I approached the Boston-based Center for Women in Enterprise, and they introduced me to the Springboard 2000 initiative. For those who do not know, Springboard is a national series of venture forums for women entrepreneurs that helps women close on the funding required to grow their businesses. The Springboard 2000 New England Forum directly resulted in IBEX landing its first round of funding with Battery Ventures as its lead investor. It gave me, as a woman entrepreneur, and IBEX, as a company, a chance to make it on our own abilities and products through exposure to VC's, investment bankers, management consulting firms, legal services, both through the actual VC presentation I was selected to present and through the preliminary coaching sessions with representatives from the various support service areas. I started IBEX with my technical network in good order, and Springboard dramatically enhanced my efforts to develop the business network that I needed. The same concepts that gave rise to Springboard for a select few women's organizations could greatly assist the arena of high-tech start-ups, regardless of gender.

So, now consider that you have a large number of high-tech ventures that may have survived through infancy to a point of actual product availability, such as IBEX today. We launch our products having met our first year deliverables with stellar performance. We have beta tests with top tier semiconductor companies that have been excellent in the results. We have been sponsored by the International Summit Tech Consortium on those beta tests. Our customers are delighted with our products and understand that it really is a milestone and a leap ahead of what is available today on the market and advanced process control.

Unfortunately, we hit the ground running during an awful market downturn. Our customers want our products, but cannot buy them right now, with no significant turn-around expected for 6 more months, minimum. So, now the company has fixed costs; we have staff, we have a roof above our heads; we have established support services, field support, et cetera, and to survive this slow time, we want to continue to seed the market with our products at reduced price, if necessary, and continue our new product development, so that when the market turns around, we are still in the race, because our larger competitors are not going to stop development in advanced process control. This means that we need to economize and raise a lot less money at a lower market valuation than we originally planned. We are not a fat organization, we are as slim as you can get right now. So, economizing is really going to be a difficulty.

IBEX, the toddler, has not reached its critical threshold of product or customer development to change the market with its novel approach and vitality. Small businesses like IBEX have the ability and the incentive to adapt quickly and innovate in a dynamic new marketplace. I believe these companies not only serve to seed larger companies with solid new concepts and products, but also

help offer the field's maverick scientists healthy and innervating environments in which to be creative and passionate.

We have extraordinarily high productivity, and perhaps one of the things that I have not bulleted up there that is very, very important, is that we are building a corporate culture that is based on professional and personal integrity and mutual respect. There are only 10 of us right now, and hopefully, we will be able to maintain that kind of corporate mentality as we become 100 or 1,000.

All these things serve to revitalize the industry and go back into bigger parent corporations, and we small businesses, trying to compete in the high tech world right now, do need some help, whether it be fast access to reduced-rate support services or to cash.

I hope my thoughts are helpful in bringing some light to the difficulties that we face as young companies, and I thank you for this opportunity.

[The prepared statement of Ms. Card follows:]

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IBEX

IBEX PROCESS TECHNOLOGY, INC.

September 6, 2001

Ms. Jaime Hyatt
Hearing Clerk
428A Russell Senate Office Bldg.
Washington, D.C. 20510

Dear Ms. Hyatt:

Please find below a copy of my testimony to be delivered at a hearing before the U.S. Senate Committee on Small Business and Entrepreneurship entitled "Entrepreneurial companies: Their needs and challenges in today's economy." starting at 9:30 a.m. on Monday, September 10, 2001 at Massachusetts Institute of Technology in Cambridge, MA.

U.S. Senate Committee on *Small Business and Entrepreneurship* Testimony:

Entrepreneurial companies: Their needs and challenges in today's economy.

Good morning. I am Jill Card, founder and President of IBEX Process Technology and developer of the IBEX line of artificial intelligence controllers for semiconductor manufacturing process tools. IBEX was incorporated in March of 2000 and so I feel particularly equipped to talk this morning about the trials faced by new ventures within the high tech market.

I have spent the last 20+ years as an applied mathematician working within the computer systems and semiconductor industries. Of those years, 17 were spent in the employ of large engineering companies. And of those, over ¾ of the time was spent within companies undergoing some form of "transition," "reorganization," "downsizing"—in other words, layoffs. I was fortunate in never having personally downsized, but energetic people with good ideas get tired of living under conditions where job security has little or no correlation to personal ability to perform. I was not alone in concluding that I would rather risk my future employment on my own ability to react and learn, than leave my fate in the hands of someone else's management decisions and a tough engineering market.

Today, within the computer and semiconductor markets, there are a lot of technical people who, either through downsizing or personal choice, find themselves on their own with great ideas, nerve, energy, leadership and organizational abilities, and the excitement that it takes to bring those ideas to market. But these technical people, like me, may never have imagined that they would be in business for themselves. As a woman in high tech, I had wrestled and struggled for years with how to maintain a career and juggle a family, but would not have considered being a ship's commander had the times not dictated this as a decidedly worthwhile option.

So in 1998, I set out from Digital Equipment Corp., with a technology license for a product I designed, and I started a business. And what I found was that despite all my technology smarts and ability to think on my feet, the only two things I had to use for barter were my mouth and my stock. For the lowest possible cost and minimal stock, I needed to figure out how to get services in

- writing business plans
- corporate and IP legal counsel
- investment banking/ venture capital
- marketing/sales/promotion

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- web page design/ collateral development
- executive team search
- technical personnel search
- financial and accounting services

I needed to get answers to simple questions like: how much is my idea worth? how much is my company worth? how much stock should I guard with my life for me, my team, my employees, future investors, etc? So I have my mouth and my stock.... and strangely, no matter how mellifluous my voice, it's my stock that all the incubators wanted me to part with.

Time is critical in high tech and if the development cycle for any new product is too long, you're probably out of business. So when you ask me what could have helped me or someone else like me just beginning, particularly just beginning in a difficult economy, I would say that any program which would speed my ability to pinpoint quality professionals in all the above categories, with incentives provided to those professionals to encourage their participation in helping me launch my company at reduced cost to me—and reduced risk to them—to help me get off the ground faster, with the right support, and still have enough equity after the first year to make a strong and healthy company—would be of tremendous help.

In the Fall 2000, I approached the Boston based Center for Women in Enterprise (CWE) and was introduced through CWE to the Springboard 2000 initiative. Springboard is a national series of venture forums for women entrepreneurs that helps women close on the funding required to grow their businesses. The Springboard 2000 New England Forum directly resulted in IBEX landing its first round of funding with Battery Ventures, as lead investor. It gave me, as a woman entrepreneur (and IBEX as a company), a chance to make it on our own abilities and products through exposure to VCs, investment bankers, management consulting firms, legal services, etc., both through the actual VC presentation I was selected to present and through the preliminary coaching sessions with representatives from the various support service arenas. I started IBEX with my technical network in good order, and Springboard dramatically enhanced my efforts to develop the business network I needed. The same concepts that gave rise to Springboard for a select few women's organizations could assist the arena of high tech start-ups, regardless of gender.

So now consider you have a large number of new high tech ventures that may have survived through infancy to the point of actual product availability, like IBEX today, that launch their products, having met all their first year deliverables with a 4 star rating, beta testing with only first tier companies, state of the art product technology and lots of potential market to grow into. Unfortunately, we hit the ground running during an awful market downturn. Our customers want our products but can't buy now, with no significant turn around expected for 6 more months. Now the company has fixed costs such as staff, established support services, office space, field support, etc. To survive the slow time, we want to continue to seed the market with our products at reduced price and continue new product development, so that when the market turns around, we are still in the race. This means economizing and raising a lot less money at a much lower market valuation than we originally planned.

IBEX, the toddler, hasn't yet reached the critical threshold of product or customer development to change the market with its novel approach and vitality. Small businesses like IBEX have the ability and incentive to adapt quickly and innovate in a dynamic, new marketplace. I believe these companies not only serve to seed larger companies with solid new concepts and products, but also help offer the field's maverick scientists healthy and innervating environments in which to be creative and passionate.

The IBEX added value in the arena of artificial intelligence hasn't been realized yet. Our ideas and products are sound, state of the art, and are piled up waiting for deployment. So, what can the government do for small toddler companies who just happen to be in the right place at the, temporarily, wrong moment? Cheap money—low-interest loans. A sharing of the risk again, this time with the institutions that are providing the cash, rather than the services.

If I didn't think that my team and other great young technology companies like IBEX couldn't cut the muster, I wouldn't ask the government for avenues of assistance. However, I know that we offer something back to the workforce and technical community

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that is revitalizing, worth growing, and worth fighting for. And we small businesses, trying to compete in the high tech world right now, do need some help, whether it be fast access to reduced-rate support services or cash.

I hope my thoughts today have been helpful in bringing to light the difficulties of just one segment of small business...and I thank you for this opportunity.

Sincerely,

Jill P. Card
President and Founder
IBEX Process Technology, Inc.
40 Church St. Suite 301
Lowell, MA 01852

Chairman KERRY. Thank you, Ms. Card.
Mr. Gnatovich.

STATEMENT OF ROCK STEVEN GNATOVICH, PRESIDENT, SPOTFIRE, INCORPORATED

Mr. GNATOVICH. Thank you, Mr. Chairman, for the opportunity to submit this testimony. Let me begin by introducing myself. My name is Rock Gnatovich, and I have worked in the software industry since 1978. I have been in a founding capacity in three start-up companies, all of which remain in business and employ nearly 2,000 people.

I am currently employed by Spotfire, Incorporated. Spotfire is an interesting story. The company was originally founded in Sweden based on Dr. Christopher Ahlberg's Ph.D. research conducted at the University of Chalmers in Sweden and at the University of Maryland. As a result of that research, the U.S. Patent Office has awarded Spotfire a patent in software technology. At the time that I joined Spotfire in early 1998, there was one employee other than myself in the United States and 15 software developers in Sweden. The company had just received its first round of U.S.-based venture capital funding from Atlas Venture here in Boston. Since that time, the company has established itself as a U.S. company operating subsidiaries in Sweden and Japan, and has grown to 179 people, 109 of which are in the United States, 5 in Japan, and 65 in Europe. Of the 109 in the United States, 71 are here in Massachusetts.

Despite these rather difficult economic times, Spotfire has thrived by focusing on the pharmaceutical and energy marketplaces where there are large concentrations of highly trained researchers, engineers, and other technical professionals that are facing very challenging tasks of having to make high-value decisions by analyzing and understanding mountains of data in very foreshortened timeframes. We call these analytic applications.

The customer adoption of our solution over the past 3 years has been very rapid. We now have 400 customers worldwide and 20,000 users of our products. Included in those customers are all of the world's top 25 pharmaceutical companies and approximately 150 biotechnology companies. Other prominent names include Chevron, Texaco, BP Amoco, AMD, Texas Instruments, Proctor and Gamble, Unilever, Mitsubishi Chemical, and many others.

Many times, I will ask our customers how did they do with the thousands of decisions that their company had to make that day. Did you have a good decision day? Did you have a bad decision day? Do you even know? It is our mission as a company to empower the users of our product and the companies and enterprises that they work in to make great decisions, and we have been rewarded with an army of true product enthusiasts.

Here are just a few examples of how the product is used. These examples are featured in the August 13 edition of Fortune magazine. At Anadarko, which is the largest independent oil services company in the United States, their exploration and production professionals use Spotfire to determine where and how to drill for oil. A new well is drilled every 5 hours and has an average cost of upward of $5 million per well. Associated with that decision to

drill a new well are multiple terabytes of data and information that need to be analyzed.

At Eli Lilly and at all the other pharmaceuticals, the enormous challenges that they face in developing new drugs and the huge bets that have to be made on new drug candidates have been well documented. Spotfire provides these companies with invaluable assistance in selecting a new candidate to move forward and discontinuing a failed project early to avoid large sunk costs.

In the semiconductor market, as represented in this case by Texas Instruments, the semiconductor market is faced with the costs and market challenges of getting a new product to a level of manufacturing efficiency quickly in order to release it into the commercial market. In this case, Spotfire provides these knowledge workers with the means to explore information in a way that leverages their expertise to identify both problems and opportunities.

As a company, we are both interesting and unique in that we were a global company from the start. This has been both a challenge and an opportunity for us. Many large companies continuously strive to understand how to serve a global marketplace. For us, it was a logistic necessity from the beginning. Harvard Business School has written a case study on Spotfire that has been taught multiple times at the business school and also here at MIT at the Sloan school on this very issue of how to manage a global start-up.

I wanted to also spend a minute on how an experienced entrepreneur manages the financial outlook of a venture-backed software start-up.

By the way, I could not agree more on the distinction between small business and entrepreneurship, particularly in this case.

Entrepreneurs go to venture capitalists for multiple reasons, but obviously high on the list is the immediate cash infusion that allows you to accelerate the growth and development of a company beyond the level that you can do by bootstrapping the business. This cash infusion accelerates your paths to the critical mass. It accelerates your ability to capture market share, the ability of the company to fully develop its offerings without having the benefit of an immediate revenue stream and to recruit and retain some of the most talented employees.

Spotfire will not be a profitable self-sustaining company until next year, but I want to emphasize that that is according to plan. At this stage in our development, we manage our cash balances and are putting in place the processes and discipline to continue to thrive in the future as a self-sustaining public company. We want to be able to take advantage of the time that we are private to make the investments in our customers, in our products, and in our channels. We could not have achieved what we have achieved in the timeframe that we achieved it without the assistance of the private equity market.

My final point is that the United States represents the critical consumer or business market for nearly every international enterprise. There is significant cost and complexity in trying to operate on a global scale when, as a company, you are relatively very

small. But, it is a necessity to be able to address the world market and to do it in a way that is both successful and responsible.

Ethically and morally, we have made attempts, even as a small company, to be a positive contributor to the communities in which we operate. We hope to be a large part in the transformation of Somerville into an exciting venue for technology start-ups and have taken a prominent position in the business and social structure of Goteborg. The United States remains an attractive venue for entrepreneurial endeavors, and at the same time, it represents a base to address the world stage.

Thanks again for the opportunity.

[The prepared statement of Mr. Gnatovich follows:]

Rock Steven Gnatovich
President
Spotfire, Incorporated

Testimony to the U.S. Senate Committee on Small Business and Entrepreneurship

Introduction:

Thank you Mr. Chairman for the opportunity to submit this testimony to the Committee on Small Business and Entrepreneurship. Let me begin by introducing myself. My name is Rock Gnatovich and I have worked in the software industry since 1978. I have been in a "founding" capacity in three "start up" situations, all of which remain in business and employ nearly 2,000 people. I am currently employed by Spotfire, Inc. Spotfire is an interesting story. The company was originally founded in Sweden based on Dr. Christopher Ahlberg's PhD research conducted at University of Chalmers in Sweden and here at the University of Maryland. As a result of that research the U.S. Patent Office has awarded Spotfire a patent in its software technology. At the time that I joined Spotfire in early 1998, there was one employee other than myself in the U.S. and 15 software developers in Sweden. The company had just received its first round of U.S.-based venture capital funding from Atlas Ventures here in Boston. Since that time the company has established itself as a U.S. company operating subsidiaries in Sweden and Japan and has grown to 179 people—109 of which are in the U.S.; 5 in Japan and 65 in Europe. Of the 109 in the U.S., 71 are based in Massachusetts.

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independent oil services company in the U.S., their exploration and production professionals use Spotfire to determine where and how to drill for oil. A new well is drilled every five hours and has average costs of upwards of $5M per well. Associated with the decision to drill a new well are multiple terabytes of data and information that need to be analyzed.

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As a company, we are both interesting and unique in that we were a global company from the start. This has been both a challenge and an opportunity for us. Many large companies continuously strive to understand how to serve a global marketplace. For us, it was a logistic necessity from the beginning. Harvard Business School has written a case study on Spotfire that has been taught multiple times at the business school and here at MIT at the Sloan school on this very issue of how to manage a global start-up.

I wanted to also spend a minute on how an experienced entrepreneur manages the financial outlook of a venture backed software start up. Entrepreneurs go to venture capitalists for multiple reasons but obviously high on the list is the immediate cash infusion that allows you to accelerate the growth and development of a company beyond the level that you can do by "bootstrapping" the business. This cash infusion accelerates your ability to capture market share, the ability of the company to fully develop its offerings without having the benefit of an immediate revenue stream and to recruit and retain some of the most talented employees. Spotfire will not be a profitable, self sustaining company until next year but I want to emphasize that is according to plan. At this stage in our development, we manage our cash balances and are putting in place the processes and discipline to continue to thrive in the future as a self-sustaining public company. We want to be able to take advantage of the time that we are private to make investments in our customers, our products and our channels. We could not have achieved what we have achieved in the timeframe that we achieved it without the assistance of the private equity market.

My final point is that the U.S. represents the critical consumer or business market for nearly every international enterprise. There is significant cost and complexity in trying to operate on a global scale when as a company you are relatively very small. But it is a necessity to be able to address the world market and to do it in a way that is both successful and responsible. Ethically and morally, we have made attempts even as a

small company to be a positive contributor to the communities in which we operate. We hope to be a large part in the transformation of Somerville into an exciting venue for technology startups and have taken a prominent position in the business and social structure of Göteborg. The U.S. remains an attractive venue for entrepreneurial endeavors and at the same time it represents a base to address the world stage.

Thank you again for the opportunity.

Chairman KERRY. Thank you very much, Mr. Gnatovich.

Let me come back to the threshold question. Both of you have described interesting journeys, not yet complete, obviously, but the immediate question that I want to try to understand in the framework of the Small Business and Entrepreneurship Committee and the Federal Government is the role it should play.

You have talked about, Mr. Gnatovich, the first round of financing that you got. What do you say to somebody who might suggest, well, OK, that is a very traditional entrepreneurial journey. If you have a product that has market acceptance or for which there will be ultimately a demand, and you are ahead of the demand curve or you are riding the demand curve, your product is going to gain acceptability, and you will do what companies have done traditionally, ultimately have an IPO and go public and your stock will measure your success and viability as you go on. Many companies have done that without ever looking to the Government for any component of that journey. Whereas, more recently, we have obviously seen emerging relationships where people say, “OK, France, Germany, China, other countries are more aggressive, sometimes even to the point of significant ownership.” We wind up competing in a much freer, more or less a fair marketplace. They are in a more assisted/targeted kind of marketplace.

What do you say to us as we formulate larger concepts or principles about how to approach this? Is there a role within the traditional restraints and guidelines of how we do business in this country for us to be more aggressive, more pro-active, or are there simply things we can do along the way to remove barriers? How would you describe that?

Mr. GNATOVICH. I would say that the way in which you are going to get money into the companies is really through two avenues. One is going to be investment funded research and the other is avoidance of cost. So, in the first case, funded research provided by programs such as DARPA can be highly valuable and accelerative to, you know, to promoting a product and getting it into the marketplace.

In our case, on the cost side, our customers are global companies and they expect us to operate along with them on a seamless basis, and issues in terms of the complexities of the tax codes and the difficulty in the immigration areas, are things that require us to put cost into the companies that do not lend themselves to highly productive kinds of activities.

Chairman KERRY. So, you would see it as secondary or ancillary issues, not necessarily primary, in terms of the business development, itself.

For example, I was talking with Dean Schmalensee a moment ago and we were talking about what they are teaching here at Sloan now. He said that one of the things he tells his students is that there is no such thing as an unregulated business. Every business has a relationship with the Government, like it or not, one way or the other. Some of those relationships are environmental regulations, others are export administration laws. I mean you can run through the gamut.

Mr. GNATOVICH. Yes.

Chairman KERRY. The question that I am trying to get at is here in Massachusetts, we had—one of our witnesses is a long-term veteran of the Mass. Technology Development Corporation. When I was Lieutenant Governor, I briefly served on that in an ex officio capacity. We made business decisions about start-up companies that had trouble getting credit, but which we thought had a viable concept. They simply were on the lower end of the food chain of what was most attractive for a fixed capital pool. So, they came to the State, and the State, in fact, invested in them, and there are a number of stories of companies that went on to become stock exchange members, highly successful, creating an enormous number of jobs; at which point, as they grew, the State would sell out its portion and not take any kind of management role or any sort of stockholder role as a group. So, it was really a—it was seed capital, I guess is what you would call it.

Mr. GNATOVICH. Yes.

Chairman KERRY. Is there a larger role for the Government in doing that without crossing the line of how we view our marketplace?

Mr. GNATOVICH. You know, I may be making a bad assumption here, but I think that is commendable, but it is very selective. It needs to be a broader kind of initiative, and as a broader initiative, again, I would look at creating an environment which funded research can be more easily accessible, and again, where costs can really be avoided by companies that really cannot afford to have that kind of infrastructure in place in their early stages of development.

Chairman KERRY. How would you do that? Particularly with respect to employees when you talk about immigration as a critical component, what is the role that you foresee?

Mr. GNATOVICH. I have to say that what we have to go through in terms of just being able to move people back and forth within our own company, it has to do with complexity. It has to do with the complexity of the tax codes and the complexity and problems associated with immigration.

I look at, to some extent, maybe the European community is somewhat of an example here, that within the European community now, things are flowing somewhat better. I am not sure that I would hold it as a model yet, but between the boundaries of the various countries within Western Europe, there is a lot more free-flowing commerce and activity.

Chairman KERRY. So, what you are saying is if you are a multinational growing corporate entity like yours, where you are not yet turning a profit, but you see it in your business plan—

Mr. GNATOVICH. Yes.

Chairman KERRY. But, you have people in one country who may be essential to something you do in this country, there should be a more seamless movement between them without the long-term problems we face in terms of immigration.

Mr. GNATOVICH. I think it goes to your distinction between small business and entrepreneurial type ventures. Small businesses maybe to some extent tend to be local activities and are managed more by local government. Very few of the entrepreneurial ven-

tures that I have been involved in have ever looked at anything less than the world as their marketplace.

Chairman KERRY. At what point, properly, do we sort of say, "OK, we did our piece and now you are out there on your own?" I mean, it is absolutely appropriate for us, I think, in terms of the playing field, to work as hard as possible to eliminate all encumbrances. That means, obviously, we have to be diligent on market access. It means we have to enforce the trade laws, we have to avoid dumping practices. We have to do all those things where we are trying to leverage our ability to make the playing field as fair and as successful as possible.

But, in terms of small business, itself, at the moment that they are really small businesses, start-up status, et cetera, what is the role that we should be playing or the SBA should be playing, for instance? I mean, like Ms. Card mentioned, her experience in terms of Springboard.

Now, I want to get you involved in this discussion, Ms. Card. You talked about the pinpointing of quality professionals and the need for exposure to VC's. Now, to some degree, the Women's Business Centers and the entrepreneurial efforts of the SBA have moved towards helping people do that. It occurred to me immediately that if there is that kind of need, maybe there is a nitch, I mean, maybe that is a service that small business entities should grow and fill.

Ms. CARD. Right.

Chairman KERRY. That there is a capacity for people to provide that kind of pinpointing. To a certain degree, obviously, there are entities that do that already.

Ms. CARD. There are and they are up and coming, and unfortunately, what is happening is that you have—

Chairman KERRY. Do you want to use the mike, maybe, so that everybody can hear you?

Ms. CARD. We have very limited resources, and basically, everyone is asking for a share of the stock. Now, that is the world, but generally, we do not have enough stock to be giving it away to all of the incubators at the rates at which it is being asked. I mean, that is why, you know, we are talking all the time and on the phone all the time with the hope that serendipitously, that we are connected to the appropriate support services. If you have no time, you have no money, and you basically are not paying your people that are working for you because they really like the idea.

Chairman KERRY. Would a purist sit here and say to you, "Well, if your product were viable enough, people would be tripping over themselves to give you X amount more for whatever the portion of stock is" or they would finance you in other ways?

Ms. CARD. I think you are right, and I believe that we are not asking for any assistance beyond the very difficult job and working hard that we are expected to do. We are running in right now at this moment into a situation that is really beyond our capacity. We are out of money, we knew we would be out of money. We expected that we would go into a second round because our product is, proof of concept is there. We have a very good relationship with our customers.

You know, what do you do at this point when you have no money and you have great relationships and, you know, Springboard has

assisted us greatly. We are making alliances now among other little companies with high tech innovative products. So that, we as a little consortium can offer something extraordinary that maybe is a good competitor for a larger company. What we would be looking for, some assistance there in innovating that approach. It is international. As Rock has said, I mean, we are dealing with German companies and French companies. We are 10 people, but it is recognized that we have a high quality product.

You know, we are learning as fast as we can, and yes, the—

Chairman KERRY. So, it is a facilitation as much as anything, that you believe is necessary.

Ms. CARD. Right. I think that it is important for there to be some thresholding and understanding that this is worth investing in.

You know, my only comment about Springboard, as extraordinary an opportunity as it was, only maybe a hundred companies nationwide, women entrepreneurial companies, are really benefitting by being selected to give that presentation before the 400 VC's. Many more are being coached, but nonetheless, it is a real culling out of the best.

Chairman KERRY. How would you then describe the role that you think something like the SBA could do? For instance, could the SBA, perhaps, have its own pool of qualified start-ups that it feels are overlooked and it somehow convenes VC's?

Ms. CARD. I do not have a problem with the idea of the SBA doing a thresholding with good cause for investing in this particular opportunity. For example, just this immediate one which is sort of an economy crisis in the semiconductor market. This is a good opportunity to say, "Yes, this is a very worthwhile activity." This company may not make it 12 months on their stocks. They really need capital right now. Make that decision and then go forward with it in just enough—with just enough incentive to allow us to survive. That is what I am really looking for.

Chairman KERRY. How did Springboard, very specifically, make a difference to you?

Ms. CARD. What was great was that they were bringing together investment banking, VC's, legal professionals, business consultants, to help coach a group of women to make a pitch. For somebody like myself, I said I can do technical presentations, that is no problem, but I did not know how to do a business presentation.

Chairman KERRY. Really do a pitch, yes.

Ms. CARD. During the coaching, Battery Ventures said, "May I talk to her now?" I signed the terms sheet 5 minutes before I walked out on stage in the Harvard Business School, and then an hour later, we had a bridge loan from Imperial Bank. So, it helped me tremendously in connecting me with the right professionals here in town. Our key lawyers, in particular. We have, you know, a lot of patents. We want good representation.

Chairman KERRY. So, we can do a better job, in your judgment, of helping to marry entities and different skills.

Ms. CARD. Right, and I would say that the effort that was spent by the Springboard Committee and CWE here in getting those people to come and share their time and their expertise and finding the woman was extraordinary, and that is what made it work. So, in fact, yes, they were doing a tremendous amount of work.

Chairman KERRY. Interesting.

Mr. Gnatovich, do you want to add anything to that?

Mr. GNATOVICH. Well, the other area that I wanted to mention is the areas where we have sort of the infrastructure working together and the role that the Government can play in that. Silicon Valley is obviously one that is remarkable, I think that the area right here around MIT is remarkable, as well as RTP in North Carolina. To the extent that you can create an environment that has a whole suite of inter-connections between academic institutions, government institutions, business institutions, that create an environment in which small businesses can survive and thrive, is an area in which the Government can play a more pro-active role.

One of our biggest challenges in going from basically 17 people to 180 people in a little over 3 years, you know, is simply the recruiting of talented people in still a very tight and difficult job market. The fact that the infrastructure is here and the reason why we are here as opposed to anywhere else has a lot to do with what surrounds the business. We could look outside of our window and basically see many of our customers. We certainly have the academic support from the institutions here in Massachusetts, but then we look at that on an international scale, as well.

Chairman KERRY. Sure.

Mr. GNATOVICH. You look to find those centers of infrastructure so your business will thrive.

Chairman KERRY. Well, as you all know, last year we passed the visa program, H1B visa program, that allowed us to bring in 195,000 skilled workers from other countries. Now, apart from the clear condemnation of our own education system that that particular action sets out for all of us, I mean, it is a damning statement when you figure that we really do not have a worker shortage in America, we have a skill shortage in America. The fact that we have to turn to some other countries with educated people is a disgrace.

With that said, it reflects some awareness by the Federal Government that we have got to find these folks in order to make them available to people. Now, we could probably do a better job. It seems to me that one of the things that comes out of this is getting the Commerce Department, particularly, to focus on sectors of our economy more specifically and do a better job of analyzing current needs and perspective needs and stay ahead of that curve a little bit, and we probably could have better interaction between those conclusions and the academic community. I mean, it tends to be pretty ad hoc, and we go in these great swings. So, that might be something that the Committee might look at a little bit.

What also leaps out at me, and I want to move to the second panel because of the time constraints here, I think you both laid out a good picture of two different entities and how you have approached it; but the other thing that leaps out at me is we probably also could do a better job of really putting together a map, if you will, a road map of all the different entities, all the different sectors, that have an impact. You talked about sort of getting rid of the burdens and lifting the side bars, for example, immigration, the tax base, et cetera, and again, that tends to be pretty ad hoc. But, if we could have a better sense of each step of the way that kind

of blocks the barricades that you run into, I think it would be helpful for us in thinking about how we can facilitate as we go forward, and I think we could try to do that with a little more specificity.

Let me thank you both for putting these two examples on the table and for doing what you are doing, and I would like to ask the second panel if you would come up now, and we can sort of pick up on this in a more general form.

So, if I could have Mr. Patrick Von Bargen who is the executive director of the National Commission on Entrepreneurship, whose study I have cited; George Gendron, the editor-in-chief of Inc Magazine; and Mr. John Hodgman, president of the Mass. Technology Development Corporation.

Folks, thank you very much for being here.

Patrick, do you want to lead off, and we will just run across the table?

STATEMENT OF PATRICK VON BARGEN, EXECUTIVE DIRECTOR, NATIONAL COMMISSION ON ENTREPRENEURSHIP

Mr. VON BARGEN. Sure. Thank you, Mr. Chairman.

Before I begin on my substantive remarks, I would like to take the procedural time to note that I have submitted testimony for the record.

Chairman KERRY. Without objection, everybody's full testimony will be placed in the record as if read in full. I thank you for your summaries.

Mr. VON BARGEN. First, I want to commend you as your first act as Chairman of the Committee was to include the word entrepreneurship in the new title of the Committee. I think that sometimes the significance of that act is sometimes hard to understand outside the beltway. But, it is, in fact, a significant change. If you think about it for a moment—the mental map of policymakers in Washington about the economy and how business is structured—I think most policymakers know there are the Fortune 500 big companies, there are medium size companies that generally populate and fund trade associations in every industry you can possibly imagine, and of course, there is the very well organized traditional small business constituency headed by groups like NFIB and the Chamber of Commerce.

It turns out, though, that by putting entrepreneurship in the title of the Committee, you have identified the most important component on that economic map, and that is entrepreneurial growth companies. They have not been on that map because they are not a very organized constituency. They do not spend much time—they do not have much time, as they are busy building companies—getting involved with politics, moreover, their timeframes are such that the company is either going to succeed or fail within 3 or 4 years, which means major public policy shifts probably cannot help their particular company. So that is why they fly a little bit below the radar of public policymakers.

But, notwithstanding the fact that they are not organized, they are critically important. At the National Commission, we use the fraction two-thirds a lot. If you look at all the data out there about what these companies do, they create roughly about two-thirds of all the new jobs in the economy. They create well over two-thirds

of the innovation in the economy. Other studies have shown that when you look at differential growth rates among countries around the world, two-thirds of that difference is accounted for by entrepreneurial activities. So this is a very high-leverage part of the economy that is not on the Washington map. But you are helping put them on that map, and you know better than I what a critical role these companies play in the Massachusetts economy.

One of our most recent reports "High Growth Companies" pointed out that Boston is actually the No. 1 area among all large metropolitan areas in terms of entrepreneurial growth companies as a percentage of all business activities. So we are here at one of the capitals of the country in that respect.

Now, I want to talk a little bit about the differences between the entrepreneurial growth company ecosystem, if you will, and small business, traditional small business, just to highlight some of these policy areas that we began to uncover with the first panel. First and foremost, let me talk about the financial capital needs of these companies. There is a set of growth stages that these companies go through, and capital plays in each one of them. Start-up capital comes in the form of personal savings, it comes from investment from friends and family, it comes from signing up for every credit card you can get your hands on, it comes from second mortgages you put on your home, and that gets the company maybe up to $200 to $300,000. Then you move into an early-stage phase, and that early stage phase has to be filled typically now with individual investors, sometimes called "angel" investors, or sometimes seed capital funds very much like the Massachusetts Technology Development Corporation would provide. Then the next stage would be going to institutional venture capital, and then finally to exit strategies for that institutional capital in the form of IPO's and acquisitions.

But the key point here is that almost at every stage, these companies are seeking equity and not debt, which is the difference with small business. Where small businesses celebrate the success of guaranteed loan programs which are admittedly critical, entrepreneurs more celebrate the success of SBICs. They celebrate the fact that the reason we have a huge venture capital industry in the United States is that in 1978, the Congress changed a ERISA to allow public pension funds to invest a small portion of their assets in venture capital. They celebrate the creation of NASDAQ. Without NASDAQ, we would not have the IPO market for entrepreneurial growth companies. The challenge today in capital is this early-stage area. There is a lot of venture capital out there. True, right now, it is very slow on the pickup, but the urgent need is this early-stage capital gap between $300,000 and $3 million, roughly.

Let us talk a little bit about human capital needs. What entrepreneurial companies need are incentives for managers, technical staff, and even entry level employees to join their companies as opposed to more established companies. The focus is on attracting skilled employees, not controlling labor costs. Whereas traditional small business might lament every increase in the minimum wage, entrepreneurs talk instead about tax-favored stock options and stock-ownership programs. They talk about the national defense education programs of the 1960's and 1970's that created math and

science graduates throughout the country, and they talk about the H1B visa program, for example.

The challenge today in the human capital area from an entrepreneurial company standpoint is reform of the K-to-12 education system, re-instituting incentives to produce more graduates in science and technology, and in a very specific case, undoing some of the damage done by the alternative minimum tax to incentive stock options.

Let us talk about other business assets, like equipment. For small businesses, tax-expensing of new equipment purchases is critical, but for entrepreneurial growth companies, the key business asset, other than money and human capital, is the creation and protection of new intellectual property—intangible assets as opposed to tangible assets. Entrepreneurs celebrate public investment in R&D, balanced patent and copyright laws, and successful SBIR and STTR programs.

The fourth area is creating new markets, and expanding existing markets. Those are absolutely critical to entrepreneurs because they create entirely new business opportunities. Whereas traditional businesses may fight for better Federal procurement setsides, entrepreneurs instead celebrate the deregulation of the telecommunications market, information-technology market, transportation industry, and also insist on the expansion of U.S. exports around the world. The challenge today for entrepreneurial companies is how will entrepreneurial companies do in the shake-out in continuing changes to telecommunications regulations and legislation, and will there be trade assistance for smaller entrepreneurial growth companies so that they can truly realize their potential in global markets.

The final area is infrastructure needs. Entrepreneurial growth companies depend on physical, legal, and social infrastructure that creates an environment in which they can thrive. Small businesses and entrepreneurial companies alike lament complex Federal regulation, but entrepreneurial companies also are concerned about continuing Federal investments in the transportation system that connects them with the global economy. Same with the communication system. Also entrepreneurs urge the Government to do everything it can do to support some of these local entrepreneurial networks that we talked about a little bit in the first panel—those local and regional networks that connect entrepreneurs with other entrepreneurs, with investors, with suppliers, with potential employees and with customers. Those are just absolutely critical to successful entrepreneurial regions. Next month, we at NCOE are going to be publishing a report on the importance of networks and how networks can be started and maintained.

Interestingly, entrepreneurs also are generally favorable towards sound environmental legislation because it creates the clean air, clean water, and recreational opportunities that they like to find in regions where they tend to congregate and grow. Finally, laws that increase tolerance in diversity in communities are quite important because entrepreneurial companies want to draw upon all skilled people, no matter what ethnic background they have, what nationality background they have, their lifestyles or whatever, and they seek out communities in which tolerance and diversity are strong.

So, in conclusion, by renaming the Committee, I think you have done a great service to the Nation. Nothing I have said here, I think, diminishes the importance of traditional small businesses concerns. They are very important to the economy, and you know that, and your record evidences that quite adequately. But, by adding entrepreneurship, you really added to the role of the Committee. I think the potential role of the Committee here could be as a steward of the entrepreneurial ecosystem in the country; that stwardship means examining every Federal policy action, with one question in mind, “Does it help to maintain or enhance or expand entrepreneurship in the United States?” If the Committee looked at its mission as playing that stewardship role, I think the value to the Nation would be enormous.

[The prepared statement of Mr. Von Bargen follows:]

Patrick Von Bargen
Executive Director
National Commission on
Entrepreneurship

Mr. Chairman:

Thank you for inviting me to appear before you today. I want to start off by expressing my congratulations and appreciation for changing the name – and the focus -- of the Senate Committee on Small Business and Entrepreneurship. As Executive Director of the National Commission on Entrepreneurship, I certainly appreciate the additional issues that your committee will now address.

The National Commission on Entrepreneurship is funded by the Ewing Marion Kauffman Foundation's Kauffman Center for Entrepreneurial Leadership. The foundation has become a leader in entrepreneurial research and education, and has created the Commission to examine the relationship between entrepreneurship and public policy and give voice to entrepreneurs' unique perspective.

In the last several years, entrepreneurs and entrepreneurship have become the focus of a great deal of media attention. For those of us steeped in entrepreneurial policy this has been both good and bad. The good part has to do with publicizing the contribution that entrepreneurship makes to the overall economy and well-being of the nation. This is true not only in the United States but also across the globe. In fact, research has shown that approximately 1/3 of the difference in economic growth between countries is due to entrepreneurship. (Global Entrepreneurship Monitor, a study by Paul Reynolds of Babson College, Michael Hay of the London Business School, William Bygrave of Babson College, and S. Michael Camp of the Kauffman Center for Entrepreneurial Leadership.) The downside is that the media has focused on the personalities of the recent, incredible boom and bust and has not distinguished the Internet bubble from the still healthy entrepreneurial economy.

Entrepreneurial growth companies were a major contributor to the economic boom of the 1990s and today are an important complement to the success of both large businesses and traditional small businesses that are their close cousins. According to one 1988-1992 study, these entrepreneurial growth companies made up just four percent of all companies but generated 60 percent of the net new jobs. While celebrated for these successes, entrepreneurship remains unexamined.

When starting out, traditional small businesses and entrepreneurial growth companies are identical. They both start small and require tremendous energy and adventurousness on the part of their founders. They both serve important

economic functions, stimulating the economy and creating new jobs to replace those lost by downsizing in other areas. And, most entrepreneurial growth companies start on the same shoestring as the lawn service or painting business down the block. In fact, who is to say whether a fun new shoe store that just opened its second location is destined to become a successful small business or a national chain of stores.

What allows some small businesses to morph into fast growing companies lies in the productivity gains latent in their companies' proposed product, service, or distribution scheme. An entrepreneur who can produce a product or service of superior quality, compared with a competitor with the same resources, -- or an equally good product with fewer resources -- offers a productivity gain. It is this high productivity – along with audacious goals -- that allows an entrepreneur to build a high growth company. Some experts believe that the huge leap in productivity in recent years has had even more to do with the upswing in entrepreneurial companies than technological breakthroughs. Searching for independence and economic support for family and children, the typical small business founder is not working daily toward the goals of revolutionizing rates of productivity or growing the business at a speed that may transform his or her industry sector.

While the ill-defined virtues such as the "spirit of adventure" are often given the credit for developing entrepreneurial companies, the process of starting a business and growing it rapidly is far more complex. There are several common perceptions about entrepreneurs that make it difficult for policy makers to understand what actions are necessary to foster entrepreneurial growth. I am going to explain that these perceptions often merely myths when an entrepreneurial company is starting out and are more likely true later in the companies development.

The Risk-Taking Myth: Most successful entrepreneurs take wild, uncalculated risks in starting their companies. While risk is involved in starting any venture, entrepreneurs when starting out often have very little to lose and are very skilled in spreading risk. For fast growing start-ups, the greater set of risks is shouldered by those who work for an entrepreneur, sell supplies to an entrepreneur, or agree to buy whatever the entrepreneur is selling. At the early stages, the greatest asset of an entrepreneur may be his persuasiveness in getting others to agree to share risk.. It is only later, when the business has created some real value, that entrepreneurs risk losing it all if they are to continue growing. This is the point when the risk-taking myth is reality.

The High-Tech Invention Myth: Most successful entrepreneurs start their companies with a break-through invention – usually technological in nature. Innovation – and inventions, new processes, and proprietary knowledge -- are certainly an important part of long-term business development. But, having a breakthrough invention, a unique product, or a radically new process is not a

necessary element at the beginning. According to Amar Bhide's study, *Origin and Evolution of New Businesses,* most successful growth companies rely on an "exceptional execution of an ordinary idea" which is enough to create the needed "distinctiveness" of a product or service. Look At Starbucks Coffee or Federal Express – two companies that revolutionized the way we do everyday things without a technological breakthrough.

The Expert Myth: Most successful entrepreneurs have strong track records and years of experience in their industries. Early-stage growth companies are just as likely to be started by relative amateurs with little background experience in the field. A full 40 percent of *Inc.* 500 founders had no prior experience in the industry in which they were starting companies. What makes these entrepreneurs successful is they are highly responsive, adaptable, and willing to provide specialized products or services. However, at later stages,, growth companies need a deep reservoir of industry expertise and specialized training in order to thrive. In fact, many entrepreneurial companies, as they begin to accelerate, bring on more experienced executives to manage the transition from start up to fast growth. For example, the hiring of Steve Ballmer at Microsoft and Lawrence Maltz at Starbucks is credited with leading these companies to their phenomenal growth.

The Strategic Vision Myth: Most successful entrepreneurs have a well-considered business plan and have researched and developed their ideas before taking action. The first efforts of many entrepreneurs are not necessarily the products or services that bring them their successes. They depend on the willingness to adapt to market demand to grow their companies. The process of starting a new business is like jumping from rock to rock up a stream rather than constructing the Golden Gate bridge from a detailed blueprint. For example, an Internet business originally intending to generate revenue from articles and analysis may evolve into a web portal that generates revenue by selling magazine subscription without any original content. Only later when a business is ready to make the transition to a later, more developed state do planning, strategy, and research become prime considerations.

The Silicon Valley Myth: Most successful entrepreneurs live in a handful of high-technology communities. According to the popular press and conventional wisdom, entrepreneurs are only in the high technology field and are only located in Silicon Valley, Austin, and Boston. Recent research proves just the opposite.

From data gathered from the Census Bureau, we found that every region – no matter how rural, no matter how far from a major university – is home to some high growth companies. High growth companies – those that grew at least 100% over the five-year period between 1992 and 1997, are also in all business

sectors, not those limited to high technology. The Census Bureau data are collected by Labor Market Area (LMA) which are, in effect, commuting areas that often cross state lines. We have calculated a growth company index for each LMA that factors in both the number of companies that grew at 100% over five years and new companies with at least 20 employees that survived three years. We also identified those broad sectors in which there was a relatively high concentration of growth companies for each LMA. (In order to conform to Census Bureau rules of confidentiality, we could only gather information in six broad categories – business services, distributive, manufacturing, extractive, retail trade and local markets. For more details about the study, and other studies mentioned in this testimony, please go to our web page at http://www.ncoe.com)

We then grouped the LMAs by size category, recognizing that comparing Boston with a population of more than 3,000,000 to Amsterdam, New York with a population between 100,000 and 150,000 was not nearly as meaningful as comparing each LMA to those of comparable size. These data yielded some interesting and helpful findings for policy makers.

These data confirm that entrepreneurial companies are concentrated in discreet areas, without regard to state boundaries. For example, Boston ranks number one in the 3,000,000+ category, and shows relative strength in the business services sector. In contrast, Providence, RI (which includes several Massachusetts counties), with a population of 1-3 million, ranks substantially lower with relative strength in manufacturing and Springfield, with a population of 500,000-750,000 ranks in the lowest 20 percent with its relative strength also in manufacturing.

<u>The Venture Capital Myth: Most successful entrepreneurs start their companies with million in venture capital to develop their idea, buy supplies and hire employees.</u> Of all the myths, the role of venture capital is perhaps the most exaggerated. Despite all the press coverage of the venture capital industry, at its peak in 2000, it only funded about 5,500 firms, not all of which were start-ups. In fact, in 1999, the year of the IPO boom, only about half of all companies that issued Initial Public Offerings (IPOs) were backed by venture firms.

Why does venture capital receive all this attention? First, it is glamorous and helps create a fantasy about entrepreneurs. Second, and much more important, entrepreneurs, when they begin to seek investment capital, whether it is venture or angel capital, often must make crucial decisions about their companies. In fact, it is at the juncture of seeking investment capital from outside investors, other than friends and family, that the myths of entrepreneurship become reality.

For example, in looking at risk taking, when companies are growing fast and seeking investment capital, the entrepreneur faces greater risks. She has

more to lose – her own investment, the investment of her friends and family, her reputation, the failure to make good to her employees and, without some protections, the benefit of first to market with her innovations. In fact, it is at the point of venture investment that entrepreneurs seek intellectual property protection for their innovations. On the issue of experience, angel or venture investors require that extremely experience and qualified management be in place to run the company. Often the founding entrepreneur has to step down from the key management role to ensure that skilled leadership is in place. Often, angel investors or a hand-selected management team will serve on a company's board of directors. Also, venture and angel investors do require that entrepreneurs present a well-developed, reasonable and far-reaching business plan. Angels want to protect their investments and venture capital firms have investors to answer to.

I have gone to some lengths to describe what we know about entrepreneurship – its role in the national and global economy and a description of who and where entrepreneurs are. This discussion is important background to try and respond to the subject of today's hearing – what are the needs and challenges facing today's entrepreneurs, and what are the public policies that support an environment in which entrepreneurs can thrive.

Challenges that face entrepreneurs are in a broad sense the same as challenges facing other kinds of companies but the solutions may be quite different. We held 18 focus groups with successful entrepreneurs in 17 cities across the country and asked them what factors allowed them and their communities to be successful and what factors presented roadblocks to them and their communities.

(As an aside, I would like to note for the Committee that we specifically did not ask about government – at any level. As you know, all too often, business' response to the question of what can the government do for you is: "The best thing government can do for me is get out of the way." Interestingly enough, when asked in a different way, entrepreneurs gave some very thoughtful responses and analysis of public policy.)

The four major concerns of entrepreneurs that we talked to fell into four broad categories – access to people, access to capital, access to technology, access to information and infrastructure, and cutting across these previous four, the role of government. While these findings are not surprising -- every business would raise the same issues – businesses that are getting ready to or are in the midst of growing fast have a different perspective.

For entrepreneurs today, their primary focus is access to capital. This is one of the areas where needs of entrepreneurs differ from those of traditional small businesses. Most entrepreneurial companies do not want to or cannot go the route of seeking loans. They do not have adequate collateral to support a

loan of a size that can make a real difference in their growth. It is venture and angel investors that are willing to take the big risks -- to bet on the ideas and drive of the entrepreneur – to possibly reap large returns. A recent article in the *Washington Business Journal* focused on both the differences between investments from a leveraged buyout (LBO) firm and a venture capital firm and the differences between the companies they fund. They describe some of the differences such as:

♦ when they invest (a venture firm invests in relatively early stage, rapidly growing companies that consume rather than produce cash while LBO firms invest in relatively mature companies that produce cash),

♦ the risks they face (occasionally a venture capitalist will lose 100 percent of his investment while LBO firms rarely do), and

♦ what rewards they reap (venture firms' combined average of huge returns – sometimes several hundred percent -- and total losses is about 30 percent while LBOs steadily growing firms average 17 to 25 percent return.)

As we have demonstrated, much of the money available to start-up, entrepreneurial companies is a result of market structure but public policy plays a large role in creating the environment for investment. Some policies that must be maintained include

♦ encouraging reinvestment of earnings during early growth stages, securities regulation that allows friends and family to invest,

♦ good exit strategies for early investors through a vibrant public offering and acquisition market,

♦ bankruptcy laws that do not forever taint a failed entrepreneur or investor, and

♦ continued recognition of the importance of investment in higher risk companies such as the Employee Retirement Income Security Act did when it redefined "prudent man rule" definition to allow investments in smaller, high-risk businesses in 1978.

At the time of the focus groups, finding and retaining quality people in all positions – management, technical, and entry-level – was the biggest challenge facing entrepreneurs. While this may have changed somewhat, entrepreneurs still have to compete for the best employees and managers to grow their businesses. Public policy that supports entrepreneurs include

♦ a good education system that produces employees with basic and technical skills,

♦ an immigration policy that both helps entrepreneurs find the best technical works and allows immigrants to bring and develop their entrepreneurial ideas in the U.S.,

♦ the ability to reward industry experts and managers to join entrepreneurial companies through the availability of stock, stock options, and favorable tax treatment,

♦ strengthening science and math education programs to generate more computer scientists, engineers, and scientific researchers, and

♦ the ability to reward workers -- other than senior management -- employed by entrepreneurial companies such as easy-to-use stock options, fair tax treatment that rewards rather than punishes employees who exercise these incentive stock options, and flexible work situations, including telecommuting and transferable benefits.

An underlying concern for entrepreneurs is the access to technology, in addition to the technology workers. Public policy that supports entrepreneurs in this area includes:

♦ pushing universities to release the research and data from government-funded research. The government invests millions of dollars each year with universities for basic research and the universities' success in spinning out the technology is one of the factors that can jump start an entrepreneurial community. MIT is one of the nation's best at technology transfer,

♦ maintainance, or better yet, an increase in public research and development monies,

♦ a balanced patent and copyright protections system, and

♦ continued support for the SBIR and STTR programs.

The need for infrastructure and institutional support for entrepreneurs was most often characterized as a state and/or local issue. Some examples of the needs of entrepreneurs include the need for reasonable and "wired" office space, simplified business application forms and procedures, and encouragement of formal and informal networks. However, they also described some needs that national policy makers can address, including adequate infrastructure for everything from broadband to good roads to airline service. Of special note, is that role that colleges and universities play in communities. While some place appreciate the support of universities others are frustrated by the arcane practices and indifference to technology transfer and the academic restrictions place on faculty trying to get involved in the local entrepreneurial community. Entrepreneurs are often frustrated that universities do not do a better job of offering good entrepreneurial education to engineers and scientists, do not maximize their role as anchor in a community to foster entrepreneurial networks, and do not equip students with skills that would allow them to remain in their

communities rather than migrate to more recognized entrepreneurial communities.

Mr. Chairman, I have tried to clarify the different stages of entrepreneurship and demonstrate that different public policies affect entrepreneurial companies throughout their growth cycle. Because of the commonly held myths about entrepreneurs, the early stages of entrepreneurial companies are often missed. As a result, the needs of entrepreneurs during the early stages are often not recognized (or are addressed by happenstance) and therefore are not given the serious consideration they deserve. Ensuring that public policy supports entrepreneurial companies from start-up through maturity is not an easy task but I hope our research – both academic and through focus groups – will prove helpful to you.

Chairman KERRY. Thank you, Mr. Von Bargen. I appreciate your comments very much, and I also thank you for your personal stewardship of the commission, which I think has made a significant contribution. Thank you.

Mr. Gendron.

STATEMENT OF GEORGE GENDRON, EDITOR-IN-CHIEF, INC MAGAZINE

Mr. GENDRON. Good morning, Mr. Chairman. Thank you for the opportunity to appear in front of this Committee. For the past few years, I have been editor-in-chief of Inc magazine, the preeminent publication for founders and top managers of America's premiere growth companies. Last summer, as we discussed earlier, I made the decision to sell the magazine, and as of last August, it had become part of the $17 billion German media empire. But, despite that ownership change, the magazine continues its mission of helping people create professional and economic independence for themselves by starting and growing their own enterprises.

I will do one thing that is most difficult for an editor this morning, I will be very brief. I just want to make really three points to you. The first is at the risk of sounding as if I am disagreeing with some of the earlier panelists, I start with the observation that the greatest misconception about entrepreneurship today in the culture at large is the belief that it is synonymous with technology. It is not. As important as the technology may be to our national interest, it is only one part of a vast mainstream entrepreneurial economy.

A corollary of this misconception is the belief that all or most of our significant new businesses are venture backed. They are not. For 20 years now, we have published Inc 500, an annual ranking of America's fastest growing private companies. This year's list, the 2001, is about to be released in a few weeks. Of this year's Inc 500, half of them were started with $20,000 or less, 88 percent were initially funded with the founder's personal assets, or what Patrick earlier referred to as friends and family money. Only 3 percent of this year's Inc 500 were venture backed at launch. We call this bootstrapping, and it is this process that transforms human capital into financial capital. It transforms hard work, ingenuity, innovation, and risk taking in every part of the economy into the true wealth of the community. I point this out because it is crucial for this Committee to understand that the challenges and opportunities of building a self-financed growth company bear almost no resemblance to the challenges of growing a venture backed firm.

Just to cite one crucial difference, in the interest of time, the overwhelming majority of young virgin companies in this country are completed unaffected by events and developments in institutional venture capital or the IPO markets. On the other hand, they depend utterly on access to credit, both long and short term. I would urge this Committee to include these objectives in examination of current conditions in credit markets where even the most credit worthy entrepreneurial borrowers are experiencing chronic difficulties.

The second thing I would like to discuss briefly this morning is the single most important development in the mainstream economy

in the past two decades, and Patrick referred to it just moments ago. It is the growth of what we at Inc refer to as the entrepreneurial social networks that have been developing in this country. During the past 20 years, we have created in the United States unprecedented levels of knowledge about every facet, large and small, of how to grow a business. The conventional wisdom is that this knowledge resides primarily in the form of books, magazines, case studies in universities, courses in entrepreneurship on our Nation's campuses. This simply is not the case. The real know-how is imbedded in the community, itself, in the knowledge possessed by service providers, lawyers and accountants, bankers and investment bankers, and principally experienced entrepreneurs who have done it all before, often more than once.

For first time entrepreneurs—in fact, I think Judy addressed this earlier this morning—increasingly, the challenge at start-up is less a question of whether you personally have the necessary skills and knowledge to launch a new venture, but rather whether you can identify the people who had that knowledge and experience and how to enlist them in your cause. This meeting is taking place at the epicenter of one such entrepreneurial network, MIT, in a city that is blessed with one of the most fully developed networks anywhere on the face of the earth.

One thing that is not well understood about the networks is that they are self-replicating. Experienced founders, mentors, young entrepreneurs, in formal and informal relationships, they invest as angel investors in the next generation of start-ups. Entrepreneurial cultures develop an entrepreneurial mindset among their employees leading to spinoffs. Increasingly, entrepreneurial companies developing managing practices and training programs desire to build upon their employees not only an entrepreneurial spirit, but the actual skills and talents to go off and start their own ventures and approach the culture building we at Inc refer to as open book management.

What this means for communities that have developed a certain critical mass of entrepreneurial activity is that entrepreneurship breeds entrepreneurship. Entrepreneurial success leads the next generation of entrepreneurial success.

My final point is to talk just very briefly about the rise of a new generation of what recently has come to be called social entrepreneurs. It strikes me that the best and brightest of every generation gravitate to that part of a culture where they feel they can have the most impact, government in the 1960's, journalism in the 1970's, entrepreneurship and Wall Street in the 1980's. But, recently, the best and brightest have taken a new direction all together and have become what is known as social entrepreneurs, creating new, young, nonprofit organizations designed not to maximize profit, but to create new innovative solutions to chronic social and cultural problems.

Ten years ago here in Boston, two young graduates of the Harvard Law School, Michael Brown, and Alan Khazei, decided to forgo lucrative careers on Wall Street and instead launched an organization many of us in town know well called City Year, a domestic urban peace corps which transforms thousands of young men and women into community leaders with the equivalent of an

MBA, and creating and leading community service projects throughout the country.

In recent years, the number of young entrepreneurial nonprofits operating in the United States has grown dramatically, as has employment in the nonprofit sector. Yet, for all of their innovation and for all of their passion, this sector is plagued with an absence of resources and infrastructure that we in the for-profit sector take for granted. The result is that many new ideas and innovations languish at the local level. Consider this: Every year, we see thousands of young promising companies go to scale; in other words, take an idea that has worked locally and bring it to the national or international level. In recent memory, in our lifetime, only one nonprofit has gone to scale, Habitat for Humanity, and most observers agree that it would never have been possible without the support of our former president, President Carter.

It is time we as a nation understood that entrepreneurship today is about more than the creation of financial wealth. It is about getting important new things done. It is time we focused on the need to create an infrastructure that will support and sustain the entrepreneurial efforts of our counterparts in the nonprofit sector, as well.

Thank you very much.

[The prepared statement of Mr. Gendron follows:]

George Gendron
Editor-in-Chief
Inc magazine

Discussion Outline

I. Small Business Basics

A. Start-up:

The contribution that small emerging companies make to the U.S. economy in terms of job creation has been well documented for the past decade. What is often overlooked, particularly in an environment like we have just been through during the so-called "go go" years of the dot-com phenomenon, is that the overwhelming majority of small businesses in the United States are bootstrapped—meaning that they are not backed with any institutional money like venture capital. They are started with very little capital often in the form of personal savings or money borrowed from friends and family.

B. Sweat Equity vs. Institutional Investments:

Ultimately, it is this process of bootstrapping that transforms human capital into financial capital. This human capital—the risk taking, imagination, resourcefulness, sweat equity, hard work—ultimately ends up building the value of the business. It has been easy, during this recent period when the focus was on the IPO market, to forget the fact that the real source of sustainable wealth in this country has always been from this overwhelming majority of small companies that are out there starting with a simple idea and very little in the way of institutional investment. Our own research* indicates that nearly 90% of fast growth companies in the United States get started without any kind of institutional or venture capital investments.

C. Job Creation:

It is important for elected officials and economic development offices to keep in mind that we have devised a system that eliminates jobs thousands at a time often through downsizing but that creates jobs in one, two or three at a time. So that what you really have is a remarkable capitalist system that is able to regenerate itself thanks to the relatively small-scale job generation efforts of literally hundreds of thousands of small businesses. It's these companies that bail us out collectively when we go through a period like the one we are in now when we have large companies almost uniformly shedding jobs at an astonishing pace.

While most of this is reasonably well-known, we still live in a culture that sort of worships scale. Where you have to keep repeating over and over again that this is now the conventional wisdom. That small companies play a critical role in job generation and wealth creation.

II. Indirect Contributions of Small Business

A. Social Contribtions –Academic research has documented the fact that by-in-large small companies have a much more substantial positive impact on their communities than their large company counterparts. There is an intense bond that

* Research performed annually in association with the Inc 500 list of fastest growing privately held companies.

develops between young, small, locally growing businesses and their communities that simply doesn't develop with the same intensity as with larger, more impersonal companies that happen to exist in the same community.

In studying the most successful entrepreneurs it is interesting to note that when you take a look of their lives outside of the four walls of the company, they play an extraordinary role in their communities: often philanthropic, sometimes educational, frequently political. These entrepreneurs are sitting on the boards of non-profits bringing not just their own money but fund raising capabilities and decades worth of management know-how from the for-profit sector into the non-profit sector. What these entrepreneurs bring that their large company or academic counterparts often don't bring is this almost infinite capacity to get things done.

Examples include Tom Galisano, CEO of Paychex and Jeff Swartz, CEO of Timberland. Beyond the contribution his company makes to the Rochester area in the way of jobs, taxes, etc. Tom Galisano has founded a philanthropic organization that focuses on giving back to the community. He has invested in other small business start-ups and is politically active. Jeff Swartz has continued to grow the family business in Stratham, NH. Jeff is on the board of City Year, is active in the local democratic party, and is chairman of his temple. Furthermore, he has established a program which allows his employees time off for community service work.

One opportunity that should be developed is to find ways to build more bridges between second-tier entrepreneurial companies and the philanthropic community. According to our research* nearly three quarters of company founders come from lower class or middle class backgrounds. The consequence of this is they often grow up in families where there were no role models for sophisticated philanthropic activity. In other words, they don't know how to do it. On the entrepreneurial side of the equation there is an enormous desire on the part of hundreds of thousands of younger, very accomplished entrepreneurs to get involved in a variety of community based activities. On the other side of the equation there is a whole new generation of young, very aggressive, intensively managed non-profits that are desperate for those kind of proven leadership skills and money. It is often difficult to bring them together.

B. Economic Contributions – Based on the concept that entrepreneurship breeds entrepreneurship, it seems clear looking at communities large and small throughout the United States that when a community gets to the point that it has a certain critical mass its starts to self-propagate. The activities of the CEOs of small and growing businesses beyond just the leadership and management of their own companies include extraordinary levels of mentoring, both formally and informally, of the next generation of entrepreneurs as well as angel investing, again both formally and informally. Indications are that there is a much greater

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George Gendron
Editor-in-Chief
Inc magazine

Discussion Outline

level of informal investing activity where entrepreneurs are investing on their own in companies within their communities and in their industry to foster the growth of the next generation of entrepreneurs. The principle motivation for these informal investments is not a return on investment. It is more a "giving back" to the next generation.

This commitment to mentoring and investing in the next generation is often found within the company as well. These entrepreneurs often end up creating cultures that breed spin-offs. Increasingly businesses are practicing what Inc calls "Open Book Management" that is the practice of opening the company's finances to every employee. These companies build internal training and education programs and a culture designed to instill business skills in every single employee.

III. The U.S. Small Business Economy

A. Barrier-free System - It is extraordinary to think that it wasn't that long ago that we were sitting back and thinking that we had an economy that was destined to play a kind of secondary role to the Japanese. Yet fifteen years later it has become clear that what we have is a capitalist system that is exquisitely designed to prosper in a period of rapid change. What we also learned was that the Japanese had a system that is designed to prosper in a period of very low rates of predictable change.

The key to our system is unbelievably simple. We have created a capitalist system that is unbelievably easy to enter and unbelievably easy to exit. We give people lots of chances for "at bats." That is entrepreneurs aren't punished for failure. Each year a substantial minority of CEOs of Inc 500 companies report that they have experienced at least one business failure before starting their Inc 500 company. Our system doesn't penalize them financially or socially—there is no stigma attached to business failure.

B. Price of Admission - There are however populations that have clearly have been left behind by this rapid economic change. These populations include certain ethnic groups and populations geographically defined. The great question moving forward is: What can we do to guarantee that these populations get to participate?

In 1984, approximately 75% founders of Inc 500 companies reported that their success was due to having a really novel, proprietary idea. In 1999, nearly 75% of Inc 500 founders reported that their success was due to superior execution and go on to report that the idea for their business was very ordinary. The overwhelming majority stated that when they started their business they were performing an activity others were already performing. To succeed they just did it better.

So what if you live in a part of the country where there is wide-spread perception that you've been left behind by the so-called new economy and you don't have this critical mass of entrepreneurs?

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George Gendron
Editor-in-Chief
Inc magazine

Discussion Outline

Increasingly people are beginning to go back and take a look at what competitive advantages a community possesses in the first place and use that as a foundation for building out a sound economic development strategy.

C. Economic Literacy – The source of competitive advantage, successful entrepreneurs tell us, is management know-how, education and problem-solving capabilities. One of the most interesting movements in the U.S. in the past 20 years is economic literacy. There are groups, mostly non-profit whose goal is to bring the fundamental entrepreneurial skills to populations, often children, that otherwise would never be exposed. Efforts like these are crucial as we strive to survive and prosper in an era where corporate institutions can't provide the type of job security that they provided in the past. People are now being put in the position that they must create that security for themselves. The jobs they create for themselves today are the small and growing businesses of tomorrow. Businesses that generate jobs and create wealth within their communities around the U.S.

* Research performed annually in association with the Inc 500 list of fastest growing privately held companies.

Chairman KERRY. Thank you very much, Mr. Gendron.
Mr. Hodgman.

STATEMENT OF JOHN F. HODGMAN, PRESIDENT, MASSACHUSETTS TECHNOLOGY DEVELOPMENT CORPORATION

Mr. HODGMAN. Senator Kerry, I would like to thank you and your Committee for holding this hearing in the Boston area regarding the needs of entrepreneurial companies. My testimony will address the issue of risk capital needed by these companies.

My name is John Hodgman. I have been the president of the Massachusetts Technology Development Corporation since 1984. MTDC is a state-chartered venture capital firm which focuses on very early-stage technology companies located in Massachusetts. Since its inception in 1978, the corporation has invested about $47 million in 111 companies, leveraging $14 of private capital for every MTDC dollar, and the internal rate of return over these 23 years is about 18.2 percent.

MTDC concentrates on companies that fall into a chronic gap in the venture capital marketplace. These firms usually have the following characteristics: They are raising relatively small amounts of capital, they are founded by technologists who are first-time entrepreneurs, and they are initially pursuing small market segments.

There are two factors that cause this gap. The first is how long it will take for companies to reach an exit that will give investors a return. If the harvest period exceeds 5 to 7 years, the rate of return may not be attractive enough for typical venture capital firms. The second is the amount of money the company is raising. As funds that venture capital firms manage have grown to hundreds of millions of dollars, these firms have set high thresholds for minimum investments. Start-up companies seeking less than these threshold amounts fall into the capital gap.

Let me illustrate. Since 1995, the capital gap has widened. One way to measure this is to look at the size of the average venture capital investment per deal. Between 1986 and 1994, the average deal size each year consistently ranged from $1.8 to $2.9 million. Then between 1995 and 1997, the average deal size grew from $3.9 million to $4.3 million. Finally, in 1998, 1999, and 2000, the average deal size ballooned to $7.3, $11.1, and $16.7 million, respectively.

At MTDC, we generally consider the upper end of the capital gap to range between 30 to 50 percent of the average deal size. From 1986 to 1994, companies raising less than $1 million fell into the capital gap. However, during the last 3 years, we found the upper end of the gap had risen to $4 million.

The more venture capital dollars that become available, the more difficult it has been for early-stage companies to raise smaller amounts of money. Between 1995 and 1999, this problem was addressed to a large degree by individual investors. However, since the stock market meltdown, individual investors have abandoned early-stage investing.

In the next few years, it appears that the venture capital industry is evolving as follows: There will be stable firms managing $300 million to $1 billion each. There will also be a large number of newer firms managing $50 to $300 million, of which a significant

number appear to be unstable. There will also be a relatively small number of experienced firms managing $25 to $50 million and a much larger number of newer firms managing $5 to $25 million.

This environment presents several challenges for all of the smaller venture firms that focus on early-stage investment. I would like to use MTDC's experience and perspective regarding one of these challenges which is efficient fund raising by the venture capital firms, themselves.

Our mission is to help companies get started and grow. We have a policy of co-investing with private investors. Therefore, we are very concerned about the health of the early-stage venture capital industry. The major challenge all the early-stage funds face is how to raise appropriate size venture capital pools in the most cost effective way. These funds or pools range from $20 to $50 million and they need to be secured every 3 to 4 years. Historically, senior venture capital partners in smaller firms have to effectively shut down investing every few years and spend up to 2 years raising $1 to $5 million from smaller institutional investors and individuals to put these funds together.

As a matter of public policy, it would benefit all stakeholders if there were mechanisms to encourage the consistent placement of smaller size investment funds within the nationwide network of venture capital firms that focus on start-up and early stage companies. This would help the professionals to focus on company building, not fund raising. It would also help to supply a steady stream of growing companies that might at some point attract the interest of larger venture capital firms. These new companies would continue to provide new job opportunities for both new entrants to the labor force and experienced people who are dislocated by virtue of the downsizing of larger companies.

Whether the mechanisms are created using tax policy, risk mitigation strategies, or "jaw boning" by public officials, is really in the domain of you and your colleagues. However, I believe that addressing this chronic capital gap is a priority you should carefully evaluate.

Thank you for listening to my testimony, and I would be happy to answer any questions.

[The prepared statement of Mr. Hodgman follows:]

John F. Hodgman, President
Massachusetts Technology Development Corporation

TESTIMONY BEFORE THE U.S. SENATE COMMITTEE ON SMALL BUSINESS AND ENTREPRENEURSHIP

September 10, 2001 at the MIT Faculty Club

Senator Kerry:

I would like to thank you and members of the Committee for holding this hearing regarding the needs of entrepreneurial companies in the Boston area. My testimony will address the issue of risk capital needed by these companies.

My name is John Hodgman. I have been President of the Massachusetts Technology Development Corporation (MTDC) since 1984. MTDC is a state-chartered venture capital firm which focuses on very early-stage technology companies located in Massachusetts. Since its inception in 1978, the Corporation has invested about $57 million in 111 companies, leveraging $14 dollars of private capital for every MTDC dollar. MTDC's internal rate of return over these 23 years is 18.3%.

MTDC concentrates on companies that fall into a chronic gap in the venture capital marketplace. These firms usually have the following characteristics:

1. They are raising relatively small amounts of capital;
2. They are founded by technologists who are first-time entrepreneurs; and
3. They are initially pursuing small market segments.

There are two factors that cause this "capital gap". The first is how long it will take these companies to reach an exit that will give investors a return. If the harvest period exceeds five to seven years, the rate of return may not be attractive enough for typical venture capital firms. The second is the amount of money the company is raising. As funds that venture capital firms manage have grown to hundreds of millions of dollars, these firms have set high thresholds for a minimum investment. Start-up companies seeking less than these threshold amounts fall in the "capital gap."

Since 1995, the capital gap has widened. One way of measuring this is to look at the size of the average venture capital investment per deal. Between 1986 and 1994, the average deal size each year consistently ranged from $1.8 to $2.9 million. Then, between 1995 and 1997, the average deal size grew from $3.9 million to $4.3 million. Finally, in 1998, 1999 and 2000, the average deal size ballooned to $7.3, $11.1, and $16.7 million, respectively.

At MTDC, we generally consider the upper end of the capital gap to range between 30-50% of the average deal size. From 1986 through 1994, companies trying to raise less than $1 million fell into the capital gap. However, during 1998 to 2000 we found that the upper end of the capital gap had risen to $4 million.

The more venture capital dollars that became available, the more difficult it has been for very early-stage companies to raise smaller amounts of money. Between 1995 and 1999, this problem was addressed to a large degree by individual investors. However, since the stock market meltdown, most individual investors have abandoned early-stage investing.

In the next few years, it appears that the venture capital industry is evolving as follows: There will be stable firms managing $300 million to $1 billion each. There will also be a large number of newer firms managing $50 - $300 million, of which a significant number appear to be unstable. There will also be a relatively small number of experienced firms managing $25 - $50 million and a much larger number of new firms managing $5 - $25 million.

This environment presents several challenges for all of the smaller venture firms that focus on early-stage companies. I would like to share MTDC's experience and perspective regarding one of these challenges, efficient fund raising.

MTDC's mission is to help companies get started and begin to grow. Since the Corporation has a policy of co-investing with private investors, we are very concerned with the health of the early-stage venture capital industry. The major challenge we all face is how to raise appropriate size venture capital funds in the most cost-effective way. These are funds ranging from $20 - $50 million that need to be secured every three to four years. Historically, senior venture capital partners in smaller firms have to effectively shut down investing every few years and spend up to two years trying to raise $1 - $5 million each from smaller institutional investors and individuals in order to put together these smaller funds.

As a matter of public policy, it would benefit all stakeholders if there were mechanisms to encourage the consistent placement of smaller sized investment funds within the nationwide network of venture capital firms which focus on start-up and very early stage companies. This would help the professionals to focus on company building, not fundraising. It would also help to supply a steady stream of growing companies that might at some point attract the interest of larger venture capital firms. These new companies would continue to provide new job opportunities for both new entrants to the labor force and experienced people who are dislocated by virtue of downsizing in larger companies.

Whether the mechanisms are created using tax policy, risk mitigation strategies, or "jaw boning" by public officials, is really in the domain of you and your colleagues. However, I believe that addressing the chronic capital gap is a priority you should carefully evaluate.

I thank you for listening to my testimony and I would be happy to answer any questions you might have.

Chairman KERRY. Thank you, Mr. Hodgman. Thank you. I want to take a moment just to say thank you for your tremendous contribution to the Commonwealth and to the economy through your years of service. I think it has been a great success story and I was pleased to be there at the beginning of it.

Mr. HODGMAN. Indeed. As I said earlier, this is a bookend because I retire in 2 weeks. I am actually going to be teaching entrepreneurship, both for profit entrepreneurs and social entrepreneurs at Tufts University.

Chairman KERRY. Terrific. They will be lucky to have you doing that.

Mr. HODGMAN. Thank you.

Chairman KERRY. Come back to those, the whethers, whether it is this or that that we might engage in. What are you suggesting that we do specifically to address that gap in capital?

Mr. HODGMAN. Let us look at the goal. The goal is to get smaller size funds raised consistently. To some degree, the SBIC program has offered this opportunity, and interestingly enough, there are incentives that will cause, for example, banks, to invest in SBIC's because they receive CRA credit, where they might not like to or that might not be a priority for them. So, I think if you took the SBIC mechanism and started to look more closely at what size funds you would like to see generated around the country, what the network ought to be, how predictable the fund managers might look at this source of capital. I think some engineering here might help.

Chairman KERRY. What kind of incentives, other than the CRA, SBIC might you envision?

Mr. HODGMAN. There may be some tax incentives that could be offered to investors who put money into these particular funds, so that they can tolerate the lower rate of return that is driven by the time of the investment, or some risk pool strategies. The SBIC does this to some degree with their approach.

Chairman KERRY. Is it a function, is the gap a function of just the time and slow return and cycle, and therefore, it is more attractive to people to manage a larger amount and get in in second stage or third stage?

Mr. HODGMAN. It is a lot easier to raise larger funds. Plus, your management fees are much higher if you raise larger funds.

Chairman KERRY. But, are not the larger funds also paying out those funds at a rate that is determined by the availability of deals that they find attractive?

Mr. HODGMAN. It is, and frankly, in the last 3 years, we had much too much money going into venture capital pools. $151 billion nationwide over the past 3 years, $15 billion in Massachusetts, alone. Those numbers, incidentally, in 3 years, were almost three times more than what went out over the previous 12 years nationwide and in Massachusetts.

What is wonderful about capital markets is that they self-correct. We are self-correcting with a vengeance right now, but the whole system has been distorted at this point.

Chairman KERRY. What is the role of the Government in terms of that? I mean, is not that the marketplace that is subject to those distortions?

Mr. HODGMAN. Absolutely, and I would not suggest that the market should be altered, except to take some lessons learned from that experience and look at what is needed to make the availability of funds at the seed and early-stage level, consistent, not fluctuating up and down. Just keep it consistent, no matter what goes on with the larger fund raising.

Chairman KERRY. Given the success of the MTDC, should there be some kind of small business program, that was to some degree, the new markets venture initiative that we started, I guess, a few years ago, or have been pushing for. Is that an appropriate role?

Mr. HODGMAN. I do not know enough about the new markets initiative to be able to use that as a model. MTDC actually got its initial funding through the U.S. Department of Commerce Economic Development Administration setting up a revolving loan fund. That was about $3 million, and then the State provided another $5 million, and we have grown that to over $30 million in assets.

So, there are some programs that could be used to try to seed some of these funds, but I think that the bigger challenge is once you have got these funds up and running and they have been successful and they have a track record, raising that next $20 to $50 million that you need every couple of years becomes the real challenge.

Chairman KERRY. Mr. Gendron and Mr. Von Bargen, what do you think in terms of the Federal role here, particularly the SBA's small business focus?

Mr. VON BARGEN. I think the idea just discussed is a very good one. In fact, to some extent, that was the conceptual notion with the new market venture funds. That bill, of course, was targeting even tougher areas in which to get entrepreneurship going, but using the risk mitigation capabilities of SBIC's and community development fund structure to pull that off. I generally endorse those ideas, and if that could be paired with tax incentives to move more capital into this seed gap area through the kind of mechanisms that we just discussed, I think that that might make a lot of sense.

Chairman KERRY. Do you draw a line, any of you, that it is perhaps appropriate for us to create a framework which may draw the capital, but we should not be making decisions with respect to the capital? Now, that is different from MTDC. You made decisions.

Mr. HODGMAN. Yes, but I think setting the framework makes a lot more sense because, you know, MTDC represents a very small amount of money. What we are trying to do is leverage private investors. So, if you can create a framework that could get private investors more interested in this segment, it is going to help across the board.

Chairman KERRY. What do you think, Mr. Gendron? You have written about this for a long time and observed it.

Mr. GENDRON. I was thinking about the program created by Governor Blanchard in Michigan in the late 1980's in which, not unlike the MTDC, but with a very specific goal of building in the State of Michigan a long term private sector venture capital presence that simply never existed before, particularly to fund young technology conduits that were servicing the automotive sector. That was a really intelligent, highly leveraged use of public funds, and it went beyond trying to pick winners in this particular case and

achieved a relatively extraordinary degree of success in adding a component to the infrastructure that simply did not exist before his tenure.

Chairman KERRY. Well, we should take a look at that. We will go back and sort of pull it out and see how it might be applied here.

Are there any other steps we should take with respect to the bootstrapping versus equity?

Mr. HODGMAN. Well, one point I want to make is that MTDC is a venture capital firm in terms of its operation, but we do something that most other venture capital firms do not do, and that is meet with entrepreneurs at very, very early stages, when they have a draft business plan. We will critique the plan, will arrange for them to make presentations in the technology capital network. We do a lot of the behind the scenes support, introducing them to consultants and advisers. I think this was stated earlier and it is extremely important in company building for people who have never started businesses before. They need this network of coaching and assistance and capital at critical stages.

Chairman KERRY. Do you think—yes, you wanted to comment?

Mr. VON BARGEN. On the bootstrapping question, I think there are a number of companies that have actually begun to sell product and actually make some profit, but have the potential to grow substantially, and they may not fit the venture capital investment profile because their candidates for initial public offering is not the case or acquisition path is not obvious to see, but they would like to continue to grow in funds. There are proposals in draft legislation right now that would allow companies at that stage, that are profitable, to defer Federal income tax paid for some period of time up to some amount, so that they could use their earnings to reinvest and the company to grow. That is a proposal we might take a look at.

Chairman KERRY. Well, I think that is valuable. I think what comes out of this this morning is the notion that there are obviously different missions, different roles, at different stages here which we could look at without violating, I think, sort of the arm's length notion again about not picking winners and losers, but just adjusting the framework, tweaking the framework in ways, for instance, there is certainly a response to what Ms. Card said about that early networking and availability, clearly SBA's role, it seems to me. Under its umbrella, technical assistance that already exists is to broaden the technical assistance component to be doing a much better, job maybe to even have a division targeted towards start-up entrepreneurial efforts versus the traditional mom and pop smaller entity that may not have growth aspirations. Those really are two different kinds of companies, they are two different kinds of approaches and two very different kinds of prospects.

Then, of course, there is the credit/bootstrapping issue. I mean, how effective is CRA? How well are people implementing it? How much are some of these banks that have consolidated maintaining small business portfolios and access in their lending? There has been the same instinct in banks, we notice, to start dealing with the larger portfolios because it is easier. Same amount of time for

the loan officer, same amount of paperwork, better return on investment, so people turn off helping the small business person.

I think we can do a lot to help energize people's focus on the start-up case. I have talked to a lot of friends in the community, and the numbers of deals crossing their tables, you know, for their decisionmaking versus the numbers they actually get engaged in are just staggering when you think about it. I mean, literally.

Mr. HODGMAN. Usually, it is about 3 to 5 percent of the total.

Chairman KERRY. So, obviously, there are a lot of ideas out there, but again, that is the nature of the marketplace, too. I mean, people are going to grab good ideas.

I have to, unfortunately, truncate this discussion, and I apologize for that, but schedule demands that I have to be somewhere else in the city. We are going to leave the record open for 10 days, and any of you here in the audience who feel that you have a comment that is relevant or an observation that could add to this discussion, there is a form outside at the desk when you leave, and that will instruct you as to how you can, in fact, contribute to the public record with respect to this. So, if you pick that up on the way out and submit that within the 10-day period, we can review and include your comments in the record of this hearing.

It is an interesting issue. In the last 10 or 15 years, Mr. Gendron sort of talked about the cycles, have put an enormous focus on entrepreneurship, and I think the public imagination has been excited by it. I mean, it is sort of a new era, as the Commission report points out, it is a new era of respect for, and even, sort of admiration and envy for the most successful of the entrepreneurial efforts of the last decade or so, not just for the wealth created, but for the impact on people's lives and concepts. One could argue that there is really a new age of acceptance of that kind of entrepreneurial activity. There are many ways that I think we could harness its energy more effectively, and that is the purpose of this effort, to figure out how we can perhaps leave it less to lady luck or to just the few who are successful to expand the market, to expand the job base and the tax base, and ultimately, the upside of the technological productivity increases that come with it for all of us. So, it is a worthy quest, I think, and we are going to continue to travel down this road and see how it comes together.

So, I thank all of you for your testimony this morning. It has been helpful and instructive, and it has begun to set some guidelines for how we might proceed as we go down that road. I really would welcome very specific notions from anybody about how the Committee might either begin something new within the framework of the SBA or other entities, the Commerce Department, Export Administration, other places which touch on these efforts, or how we might augment current efforts that are already underway.

The SBA, I might add, has moved on its own to sort of begin to cope with a lot of these issues, and I think it is doing a much better job than it did previously in helping to provide some of the networking that Ms. Card talked about.

So, we will leave the record open for 10 days. I thank everybody for being here today, and the hearing is adjourned.

[Whereupon, at 10:55 a.m., the Committee was adjourned.]

COMMENTS FOR THE RECORD

Marge Amster
Commercial Areas Coordinator
Economic Development Office
Town of Brookline, MA

Submission for the Official Record of the Boston area Hearing for the U.S. Senate Committee on Small Business and Entrepreneurship

Senator Kerry:

Thank you for the opportunity to submit comments to the U.S. Senate Committee on Small Business and Entrepreneurship.

For the most part, the Town of Brookline businesses are what is typically called "Main Street". This doesn't mean we are quaint and old fashioned; young professionals form a high percentage of the employee and customer base. Our business community primarily consists of independently owned companies who continually make substantial philanthropic contributions. Several of our businesses have taken advantage of SBA services, both technical and financial. At a merchant association meeting earlier this week, I heard many positive comments about the SBA. Two potential SBA areas of improvement that were identified were

1) More marketing advice
2) More outreach to increase awareness of SBA programs

I was very interested to hear Mr. Gendron's comments identifying "...the real source of sustainable wealth in this country has always been from small companies that are out there starting with a simple idea and very little in the way of institutional investment." I echo that observation and further add that the independent spirit and work ethic of these founders of small companies is the best of the spirit of America and capitalism.

But nonprofit companies are completely left out of our business support systems. Some nonprofit startup companies have the potential to be entrepreneurial.

Presently in Brookline, I have knowledge of two fledgling nonprofits with entrepreneurial potential:

PALS, a singing based performing arts training program in residence at one elementary school that has achieved such artistic excellence that they regularly perform with the Boston Symphony Orchestra. The PALS program offers a model for achieving excellence in the performing arts that could enrich many.

VIRTUREAL CLASSROOM, a mathematics education system using master teachers, the internet and personal computers. Virtureal Classroom was piloted in three Boston area middle schools last year, was well received, but capital for educational companies is quite rare.

Again, I'd like to thank you for the opportunity to submit comments.

Marge Amster, Commercial Areas Coordinator
Economic Development Office, Town of Brookline
333 Washington Street
Brookline, MA 02445

South Shore
Chamber of
Commerce
The Chamber and you...

September 10, 2001

Comments of Terry Fancher, CCE, General Manager, South Shore Chamber of Commerce, Quincy, MA

Senator John F. Kerry
Chairman
U.S. Committee on Small Business and Entrepreneurship

Senator Kerry:

It is a great pleasure for representatives of South Shore Chamber of Commerce, the second largest chamber in Massachusetts, and our South Shore Economic Development Corporation to greet you today. Our Chamber has worked with you in past years on legislation to help businesses prosper. We did this during the last recession and during the concerns over Y2K. Our development corporation remains strong and has been a conduit for money from the Small Business Administration. We have positively affected thousands of jobs and hundreds of companies, and you have supported our efforts and those of others in that effort. We have appreciated your own Massachusetts Day in Washington. It has provided business leaders with up to date information that they can use in their businesses.

What are the needs of business today and the challenges we face? First the needs.

Business is flying at the speed of light. Changes have taken place in the last ten years that never could have been contemplated. Cell phones, laptops, 24-7 retrieval of information, computers, and a global economy have changed the way we all do business. We have to respond quicker, and our responses have to be correct all of the time, not just part of the time. We need you to be aware that government is beginning to move as quickly as business needs it to, but we urge you to make sure technology in government moves as quickly as it does in business. Furthermore, we need to make sure telecommunications and energy sources are secure. We have heard of over 40,000 checks to the IRS totaling $810 million being lost or destroyed. We read on an almost daily basis of computer hackers trying to disrupt business and government. We need to make sure government moves quickly, and that all possible safeguards are in place so that business can continue to prosper.

Secondly the challenges. We need you to be aware of the importance we place on the ability of small business to compete. We are facing issues on a local and national level that concern us greatly. Locally we face initiatives from labor pushing so-called

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"responsible employer" initiatives on both public and private projects. Business has a responsibility to provide jobs. It is not the responsibility, nor is it reasonable to expect business to meet unrealistic government mandates repeatedly imposed upon the business community. Mandates such as "responsible employer" ordinances are inherently unfair, place an unnecessary burden on businesses, violate the spirit of open competition and prohibit small businesses from succeeding by limiting and/or eliminating their capacity to compete in the free market system. These local ordinances, which are appearing more frequently through some of our larger communities, are being spearheaded by organized labor in an effort to limit competition to those firms who have the financial wherewithal to meet the unnecessary, repetitive and burdensome labor standards.

On the national level, we have become involved in a fund raising effort to help Oklahoma become a right to work state. It is our firm and alterable belief that small businesses should be allowed to compete for business on a level playing field.

We thank you for your time and stand ready to help in any way we can.

From: Siraj Khan, VP & Chief Operating Officer, Kinoo Inc. Cambridge MA

To: The Senate Committee on Small Business and Entrepreneurship

Comments for inclusion in the Official Record

- In the 8(a) program, certification runs for 6 years. We suggest that there is an extension to this 6 year period, say by another 4 years, even if it is at lower levels of $dollar awards.
- It is now rare to see a RFP in the CBD or Pro-Net, which is an exclusive 8(a) set-aside. For the 8(a) program to retain its steam, there should be more 8 (a) set-asides
- Small businesses should be targeted for set-asides. Preference should be given to those small firms, who have not been historically successful in winning awards so far.
- There should be some mechanism by which, when a firm graduates from the 8(a) program, is able to team with a larger organization, eg. sub-contracting, mentor/protégé
- There should be other contracting vehicles, which are able to provide similar opportunities to SDBs. While credit lines are available later on, seed capital at start-up isn't.
- For larger contracts awarded to larger companies, they should be asked to set-aside 10% of the contract value, for small disadvantaged firms, to operate as sub-contractors.
- Higher priority or preference to Native-American owned-firms or two or more 8(a) firms teaming together and offering their services jointly as a contractor.

September 24, 2001

Robert G. Kispert, Director of Federal Programs
Tom Hubbard, Vice President
Massachusetts Technology Collaborative

September 24, 2001

Senator John F. Kerry
Chairman
Senate Committee on Small Business and Entrepreneurship
428A Russell Senate Office Building
Washington, DC 20510

Dear Senator Kerry:

We applaud your decision to expand the focus of the Senate Small Business Committee to include entrepreneurship. As each of the witnesses at the field hearing held at the Massachusetts Institute of Technology on September 10 testified, the challenges faced by technology entrepreneurs as they start and grow their businesses are often quite distinct from those faced by the rest of the small business community. The importance of the role of these entrepreneurs as agents of innovation and as the source of much of the growth in the economy during the past fifty years has been well documented. At the same time, technology entrepreneurs face a variety of new and continuing challenges that we hope can be addressed by your committee. We have framed these challenges in the context of the support already provided to technology entrepreneurs through federal R&D programs. However, we believe that federal responses to these challenges can be made available to technology entrepreneurs irrespective of participation in such programs.

Needs of Technology Entrepreneurs

Small innovative technology companies have unique needs that are often unmet by traditional business networks, service providers, and economic development programs. The products and services provided by these companies often require substantial investment and knowledge to develop, address very specialized niche (but often geographically dispersed) markets, and may need to meet the requirements of a complex regulatory environment. By definition, these companies are breaking new ground – doing something that is different than what was done previously. This introduces levels of business risk that are often significantly higher than that experienced by other entrepreneurs. Among the many needs of small innovative technology companies, access to resources that will enable them to manage risk to levels commensurate with the expected rewards of success ranks high. The federal Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) programs, as well as the Advanced Technology Program, provide substantial investment that can reduce technical risk. However, gaining access to these funds and effectively leveraging them to commercialize the technology continue to raise challenges to small innovative technology companies. We encourage the support of these programs and the expansion of the Federal and State Technology (FAST) Partnership and the Small Business Development Center networks (SBDC's) to help companies meet these challenges.

One of the biggest needs for these companies is ***relevant outreach***. In the context of FAST, companies are looking for funds to develop new products and services, not necessarily for information on federal support for R&D (SBIR, STTR, ATP, etc.). Relevant outreach must either have a relatively high probability of connecting the company with a funding opportunity or meet some other company business

Robert G. Kispert, Director of Federal Programs
Tom Hubbard, Vice President
Massachusetts Technology Collaborative

objective (e.g., networking with potential strategic partners). Experience has shown that managers of successful companies have many demands on their time. Outreach that does not pass their relevance threshold will often be ignored. Experience has also shown that federal R&D support is often not the best opportunity for many technology companies. An expanded FAST Partnership should be encouraged to provide outreach that attracts both public and private support for product development by technology entrepreneurs.

A second major need is ***access to authoritative, relevant information*** that is responsive to the interests and timing requirements of the inquiring company. Information needs of small technology companies are extensive and response often requires in-depth knowledge of specific markets and technologies. Credibility of source is a major factor in whether the source will be used. In addition to program and topic information, small companies often need access to market intelligence and regulatory/permitting requirements. Although this information is often available through the SBDC's for other small businesses, it often does not meet the needs of technology entrepreneurs because either the technology addresses niche market opportunities that may not be addressed by traditional data sources (e.g., Bureau of the Census) or the technology addresses markets that may not yet exist. The SBDC's need training in identifying and tracking non-traditional market research sources, and need to create a market research delivery mechanism that is responsive to the needs of technology entrepreneurs. While these market research services should be provided irrespective of participation by technology entrepreneurs in federally sponsored research, they should be coordinated with the commercialization assistance programs provided through the SBIR and other federal R&D programs.

A specialized information need is for ***referrals or access to contact information***. In the context of federal R&D, the most frequent need is for referrals to potential strategic partners for cost sharing on ATP, Phase II SBIR, and similar federal programs. Other needs focus on specific service providers – patent attorneys, accountants with experience in government contracting, general business attorneys, etc. In some cases, companies need referrals for specialized space or facilities, such as clean rooms or wet labs. The creation of these referral networks meeting the needs of technology entrepreneurs should be encouraged through the SBDC's and the FAST Partnership.

A third major need is for ***technical assistance***. Technical assistance needs for companies participating in federal R&D programs typically fall into three broad areas: proposal assistance, commercialization strategy development, and business planning/business plan development. (Assistance needs are similar for technology entrepreneurs seeking non-federal support to build a business.) Experience has shown that most companies with enough technical capacity to be competitive in the federal R&D marketplace can prepare an adequate proposal with modest coaching. However, developing a commercialization strategy or a business plan are as much processes as they are documents, and often require interactive contact over a sustained period of time. Companies often know the answers, but less frequently know the questions that need to be asked to develop an effective strategy or business plan. Realistically scoping a market, correctly identifying factors influencing customer purchasing decisions, understanding the effort (and time) required to first identify a prospect and then close a sale, and recognizing the difference between a technology and a product are common issues for most small innovative technology companies.

The fourth major need is for ***money***. Although the vast majority of companies we work with need investment capital to grow, most have their short-term working capital needs under control (typically through the three F's - friends, family and fools – with added support from Visa and MasterCard). In some cases, particularly in the biotech market where start-ups are often the result of doctoral or post-

doctoral research, early stage venture capital has already been obtained. However, for most companies, funding to meet cost sharing requirements imposed by some federal programs (e.g., FAST Track SBIR, ATP) or to pursue serious scale-up/demonstration/ commercialization remains a major issue. While some companies participating in the SBIR/STTR programs are able to address market opportunities that meet venture capital thresholds, the vast majority does not. These companies need to develop alternative financing strategies, usually based on some form of alliance with one or more industrial partners. Irrespective of the source of funds, however, the companies need assistance developing a business plan or financing proposal, need targeted referrals to receptive partners/ investors, and usually need legal and accounting assistance to structure an acceptable deal. Finally, they need creative assistance in identifying alternative approaches to purchasing, leasing or otherwise gaining access to equipment and facilities for research and production.

The final major need for small innovative technology companies is ***networking opportunities*** with peers and potential partners, end-users, service providers, investors, and, in some cases, regulators. Massachusetts and other technology intensive states often have a rich infrastructure of trade organizations, small business associations, enterprise forums, venture forums, etc. which address much of this need in core regions. To the extent that this infrastructure is developing outside the core technology region of the state, it is usually in response to an evolving critical mass of activity in many of the key industry clusters. However, much of the evolving infrastructure is limited to peer and service provider networking, has limited resources/ membership, and needs nurturing to meet the diverse needs of small innovative technology companies. Federal support to identify best practices for technology-oriented networks, as well as to support linkages with federal resources such as the SBDC networks and the FAST Partnership, should be encouraged.

Conclusions

We encourage you to utilize the current federal support for R&D conducted by technology entrepreneurs as a point of leverage in what we refer to as the *system of innovation.* These companies can provide a critical mass of activity and a framework for addressing the needs of technology entrepreneurs. These needs go far beyond providing access to federal R&D support and proposal development assistance. As shown above, there are a variety of appropriate roles the federal government can play in the development and expansion of an enhanced infrastructure that is responsive to the needs of the entrepreneurial community. We believe that the SBDC's and the new FAST Partnership developed by your committee can provide the mechanism for creating this enhanced infrastructure. We look forward to supporting your efforts in these areas.

Sincerely,

Robert G. Kispert
Director of Federal Programs

Thomas E. Hubbard
Vice President